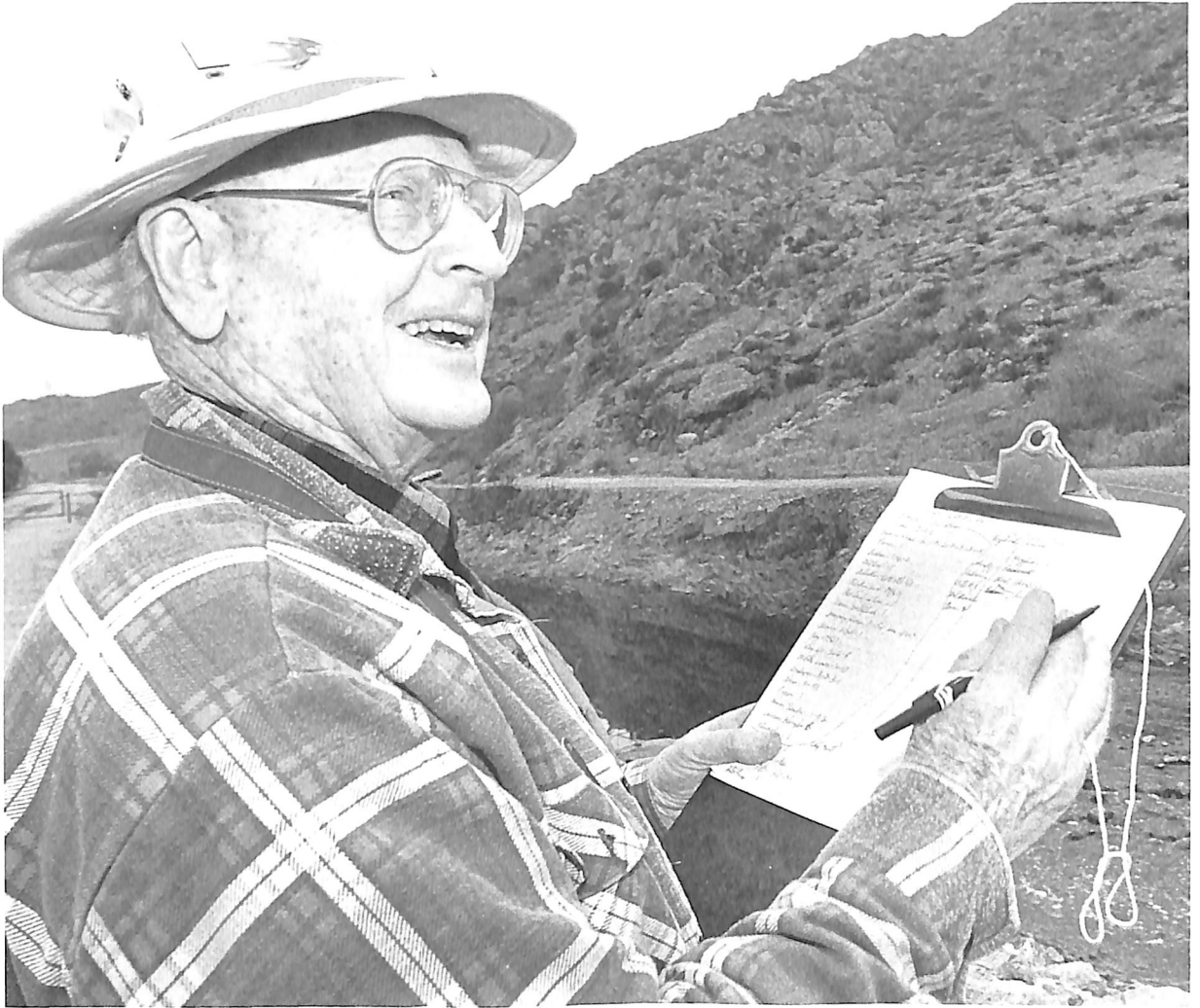


STORIES

I like to tell



An Autobiography

H. Elliott McClure

To Anne,

Best
Wishes

H. Elliott McClure

25 March 95

"STORIES I LIKE TO TELL"

I hope that you enjoyed these stories!

Please excuse the many errors that occurred between proofreading and publication.

If you know someone who might want a copy, the publication and shipping cost is \$14.00.

This book can be ordered from me at:

H. Elliott McClure
69 E. Loop Dr.
Camarillo, CA 93010-2327



Lucy and I with "Beautiful Beulah" the Bushy-crested Hornbill and "Hairless Joe" the White-crested Hornbill, Kuala Lumpur, 1962

STORIES I LIKE TO TELL

An Autobiography

H. ELLIOTT McCLURE

Illustrations by Amy Watt

**Cover: photo by Chuck Kirman,
courtesy of the Camarillo Daily News**

Copyright 1995
by
H. Elliott McClure

No part of this book may be reproduced in any form,
except for brief excerpts for purposes of review,
without the written permission of the Copyright owner.

Distributed by

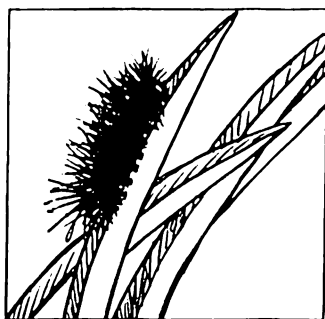
Elliott McClure
69 E Loop Drive
Camarillo, CA 93010

Printed in U.S.A.

TO LUCY



1. Introduction



A broad trail tunnels the quiet rain forest; a path made deep by unheard footsteps of elephants, one recently turning from the path where its passing is told only by the waving of a palm frond, a path marked by the wary steps of a massive gaur and the secret pucks of an invisible tiger. As I move through this Thai forest the sun tops the eastern horizon and its edge spills a golden foam in the morning mist of a nearby glade. Voices of forest mysteries accented by the

rhythmic gutturals of an Emerald Dove pulsed around me shattered by the clarion redundancy of a Green-legged Tree Partridge sequestered in an unseen thicket. A faint wind rustles through the trees like echoes of a distant waterfall, burdened with the cloying sweetness of some flowering giant. As the partridge serenade subsides the faint drone of the forest's minute life settles around me to be shattered by cicadan sirens. Scarlet wings of a minivet flash across the trail and the floor of the forest is clearly visible under gold streamers of sunshine, a slanting beam of which reaches through the trees to burst upon a mote of color with bright eyes gleaming above a weathering log. The wail of a White-handed Gibbon clings in the thick cobalt air. Another shaft of sunlight cuts diagonally through some break in the green canopy laying a yellow sharp-edged pattern in the jungle twilight and burns brightly on the prismatic head that now peeks around the end of the fractured log, a fragment of rainbow disappearing by some legerdemain. I have seen my first and only Blue Pitta (*Pitta cyanea*).

"Buddy, where are you?" my mother called more than three-quarters of a century ago as she looked for me in the fenced and meager backyard of a flat near the beaches of Lake Michigan somewhere in Chicago. She found me, where I had crawled from the confines of the back porch, hovered over an ant hill watching the diligent hexapods hasten hither and yon. It was not the only time she had found me there and would not be the last before I learned to walk to them and study them with youthful eyes and juvenile wonder. I was an entomologist!

My Uncle Ned, whom I loved all through childhood and adolescence until cancer took as a young man, husband of my mother's middle sister Mabel, sat in our dining room in that same obscure flat and watched me, beneath a table, put a small ball of cotton into a milk bottle and pour it out, over and over again until he exclaimed, "Clara! I don't think that kid has enough sense to cry!"

That same uncle in Decatur a few years later watched me pace about the front porch, face and arms blotched and blistered from the urticating hairs of the wooly caterpillar of an arctiid moth that I had captured and examined

a few hours before, muttering to myself, "A wooly worm is a wooly worm and that's all there is of it!"

My teen years I read avidly the ten volumes of Henri Fabre's lives of insects and before finishing high school I had read and reread Comstock's "Introduction to Entomology". My destiny was an entomologist.

In the twenties Roy Chapman Andrews thrilled the world with his discoveries in the Gobi desert, eloquently described in the National Geographic. In the thirties William Beebe plunged to great depths in the bathysphere also hailed in books and the National Geographic. I wanted to explore the world of insects, the world of insects within the soft green light of tropical rain forests. As I graduated from high school I wrote to both scientists and requested a place in their expeditions. They were kind and answered my letters telling me that the work was demanding and needed experience. A few years later I emerged from the University of Illinois a Phi Beta Kappa and with High Honors in entomology, imbued by the ideals and training of C.L. Metcalf, W.P. Flint and that wonderful pioneer in ecology Victor E. Shelford. Again I wrote to the two explorers and offered my hopes and aspirations. Again both answered, but it was the midst of the Great Depression and there was no money.

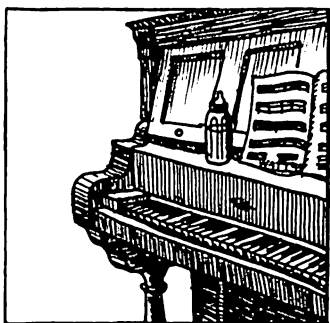
Another year of entomology, several research papers and theses and with a Master's in hand I wrote once more. Beebe came to the campus to lecture and after hearing him I greeted him back stage. Yes, they needed good field personnel, but now money was such that only those who had expeditionary experience would be selected.

Borrowing money from a willing Uncle John De La Mater, married to Mom's older sister, I joined ornithologist Arthur C. Twomey, of the University of Illinois and later of Carnegie Museum, in a summer's expedition to Churchill, Manitoba, where I briefly met the great Canadian ornithologist Taverner. For two months I explored the invertebrates of the tundra producing a report that to this day remains a landmark in the study of tundra ecology. But it was not considered good enough for a doctorate dissertation at Iowa State College. Although I had learned about insects, I had not learned about diplomacy and a confrontation with W.P. Hayes at Illinois had resulted in my release from the entomology department.

Carl Drake, of lace bug fame (tingids), as head of the department of zoology at Iowa State understood ecology only as physiology and wanted me to study the digestive rate of the House Fly. I scrutinized the dietetic capabilities of this infamous insect for the better part of a year before released by George Hendrickson and the Iowa Cooperative Wildlife Research Unit into wildlife management and the life of the Mourning Dove.

Thus, four years more and I once again wrote to the two now aging scientists with the same answers. "Go do it yourself!" So this is an account of fifty-odd years of the fun of "doing it yourself". I call it "Stories I like to tell".

2. *Early Years*



Traveling was in my blood! My father, Howe Alexander McClure was a traveling salesman, selling "Dr. Hess and Clark stock foods and medicines" all over Illinois. My mother was Clara Phillips, a trained concert pianist. In an over-exuberance of youth, through strenuous practice, she strained the ligaments of her hands, so disabling them that her technique was impaired and she could not go on to the concert stage.

The medicine of the time offered her no repair

and she remained frustrated the rest of her long life. She was beautiful, intelligent, kind and restless. I do not remember the date, but she married my father some time during the first decade of this century. I was born in Cook County Hospital, Chicago, 29 April 1910. It had been a rough delivery and I was bald and battered with swollen face and a blackened eye. She groaned and turned away when they brought me to her! I was not a baby that cried and though she was breast feeding me, I failed to gain weight. She learned that she had an inadequate volume of milk, and as she would tell, she gave me a full eight ounce bottle of formula. This I drank down, heaved a sigh of contentment and went to sleep and she cried miserably as she realized that she had unwittingly been starving me.

In spite of it all, I grew to be a typical, active red-headed, freckle-faced boy with infinite excitement and infinite patience in the love of insects. Although Mom had many tales to tell, I have but three clear memories of those first five years in Chicago. One, a child's picture memory of a day on the beach with someone's bulldog which "fetched" a stick when thrown across the sand or into the water. The second involved a lesson that molded my sense of honesty for life. I wanted to be a "big shot" among the neighborhood children of my age, so I suggested that I treat them to candy, using money I had saved in my "piggy bank". Mom was entertaining a visitor, so I tiptoed into the house, scurried across the doorway of the room where they were chatting, took my bank full of coins, and we all repaired to the nearby candy store. The proprietor should have sensed the odd situation since he knew me and I did not usually have such a fortune to splurge. A considerable number of the coins resulted in a large bag of sweets which we began to divide in a secluded hide-away. Alas, one Judas did not feel that he received his fair share and "tattled" to my mother. Restitution fell with alacrity! Mom hauled me in, remnant illicit candy and all. She paddled me severely (in those days, the righteous weapon used was the wooden back of a hairbrush which hurt for hours), threw the candy and piggy bank with its precious remaining coppers into a waste basket, and sent me to bed without supper. Then, as she would tell later, she sat down and cried, fearing that I would hate her.

The third memory was another that bore with me all through the years. We lived close enough to Jackson Park where the 1890 World Fair building housed much of what is now the Field Museum of Natural History. Today this

renovated building is a science and industry museum. Its great hall held suspended from the ceiling the skeleton of a whale and around this hall were balconies of showcases full of biological specimens. Regularly we walked to the Park, where each time I gazed transfixed up at the wondrous whale, but there was one case that held specimens which I coveted. This was an exhibit of insects carved of jade by Chinese artists. Among them gleamed a sparkling tree of green peopled by cicadas of white, pale or emerald jade. Later I learned that such jade cicadas were placed upon the unseeing eyes of the dead to help guide them along the pathways of the hereafter, but the vision of owning one of these was always with me. Seventy years later I fulfilled that wish in a shop in Macau.

Other stories arise from that period, events that I did not recall, but which Mom liked to relate. As Dad continued to travel, she was lonely and I her companion. She took me with her everywhere. At a restaurant off Michigan Boulevard she won a door prize and sent me down the aisle to accept it. Seeing this red-headed youngster approaching, the master of ceremonies turned and took from among the prizes a Charlie Chaplin doll as large as I and handed it to me. The crowd applauded as I struggled with it back to our table.

She had taken me to a movie that she wanted to see, a love story. I was bored and restless and to quiet me, she whispered about the story of the picture. This was in the days of silent movies, of course, and she explained that the people on the screen had gotten married and now they had their little baby. I considered this for a moment and in the loud shrill voice of a child, one that could be heard for rows around, piped up, "Mommy, you had me before you were married, didn't you?" She shrank at the stifled titters around her and blushed when the lights went up.

Bored at another movie, I slid off of the seat and began crawling beneath it and the adjacent ones. I came up with a gold ring bearing a small diamond. Being a boy it was not likely that I would wear it, so Mom had the diamond mounted in a stick pin for ties and sent it as a gift to Uncle John. He wore it for years and later returned it to her for me. But I am not a tie wearer and she had it mounted in a gold nugget given to her by an admirer who had panned it in Alaska. She gave it to me and I gave it as an engagement ring to Lucy.

Mom, born 30 May 1886, was the third daughter, Clara, of Jeannette Elliott and druggist Fletcher Thomas Phillips of Olney, Illinois. Gertrude was the eldest and Mabel second. I don't know anything about the courtship of the two older girls, for no one seems to have told me about them. Mabel married Ned Freeman and they settled in Decatur where he worked in a bank. John DeLaMater met Gertrude and they were in Chicago for a time, later moving to Washington, D. C. where he was an administrator in the Federal Reserve Bank all of his professional years. While Dad was traveling around Illinois in 1906, he sent many leather postal cards of the time to Clara where she was studying music. She went to Chicago to continue her piano studies and concert perfection and in 1907 he continued with these amusing cards. Then in August one was addressed to Clara in care of Gertrude DeLaMater at 1549 Bradley Place where she was visiting, or possibly this was their home and Clara was staying with them. But on 18 February 1907 Clara sent a card to her mother

in Decatur imprinted with a matron looking at a hanging goose in a shop and on it she wrote "Break the news to Pop. Everything is lovely and the goose hangs high. From your loving daughter and son in Chicago, Clara and Howe." Could they have spliced without telling her father?

Grandpa Phillips ran a music store in Decatur and it was undoubtedly this daily contact with music that inspired his youngest daughter to study piano. Jeannette Elliott Phillips, her mother, was of the Elliots of Richland County, Illinois. Clara and Howe named their son Howe Elliott, and he and Lucy in turn named their first daughter Jeannette and second daughter Clara Ann, both names in honor of grandmothers. Such is the skein of family names.

It was sometime after the Chicago date that John and Gertrude moved to Washington and bought a town house, 3330 17th St. N.W., which was the home in which their daughter Marjorie grew up. Marjorie was two years older than I and they were still in Chicago at my birth. Since I was bald, this concerned her greatly and she watched carefully to see if and when hair would appear, commenting, "I think I see itsy-bitsy fuzz, Aunt Clara!" Chagrined at having a rough-necked dirty little boy, Mom often wished aloud that I had been a nice dainty little girl like Marjorie, who was a major love all of my life.

It was before we left Chicago that my travels began, we visited Washington. Many of the streets in this part of the city were still cobble-stone. I lost control of my tricycle on a slope and whirled into the cobble-stones over the handlebars and head onto one. Marjorie led me weeping back home where Aunt Gertie was much flustered and concerned by the immense lump on my forehead, but Mom was more pragmatic. She simply put cold cloths on the lump and the bruise soon subsided.

I can't remember Grandmother Jeannette and she may have died during those early years. Grandpa Phillips closed the music shop and retired and later married again, a union that the rest of the family seemed to resent. His home was 1076 W. Main Street near the corner of Oakland and West Main by Millikin Orphanage and the University of Millikin campus and at which there was a very dangerous railroad crossing. Grandpa liked to sit in the swing on the front porch and watch the street cars and automobiles go by. He tried his hand at driving, but had to give it up for he had a tendency to turn toward any approaching object. I can remember him on the porch, but have no recollection of his death.

World War I was underway when we moved to Decatur and stayed for a time with Uncle Ned and Aunt Mabel. They lived on North Main which was a street of residences. There were businesses along Water Street to the east (parallel to North Main) which also carried the street cars. On Sunday Mornings, Uncle Ned would walk me to a candy store and buy me chocolate confections in the shapes of animals and people.

There were lots of children in the neighborhood and come spring, "chicken pox" and "measles" or "mumps" were tacked to nearly every front door. These were war years, but as a carefree and energetic seven-year old, little of the world events impressed me. Rather I was in to "trading" with the other boys, one toy for another, a pocket knife for a trinket, one marble for another. At this I was not adept. Usually I came home with some non-entity

that I had traded dearly for. The final straw for my mother was when I traded an expensive new toy for a small beat up metal sword. She marched me back and made the mother of the smarter lad give back my toy, which ended my "trading".

In the dead of winter Aunt Mabel died; it may have been diabetes. The services were at home and the coffin in the front room (parlor) with flowers banked behind it. Snow covered the ground and when I ran into the house from the blinding sunshine all was dark save for shreds of sunlight playing on the flowers.

We were visiting Uncle Ned on Armistice Day (11 Nov 1918) where crowds with flags and parades tramped North Main all day long. Somewhere I had found a cowbell which I rang incessantly until I wore a blister around my thumb.

We had moved to Grandpa's house in 1916 and that fall I entered first grade at Oakland School only a three-block walk from home. There, another love entered my life, my first grade teacher, Miss Boyd. To be prompt was strongly impressed upon me and one day I was late to school, missed the bell, all had marched in and the school grounds were bare. Deeply humiliated, I returned home where Mom sympathized with me and assured me that it was better to be a little bit late than absent. She walked me back to school to explain to Miss Boyd who gave me a breath-taking hug.

Across West Main Street in a little wooden house in a hollow lived the Osbornes. He was a powerfully built man, in the city fire department, later to become chief. On warm summer evenings he liked to lie on his back on the lawn and doubling up, let us kids sit on his feet. With a quick thrust he would throw us into the air. We loved it, especially the red-head from across the street. One evening I twisted in the air and instead of landing on my feet and going into a roll, I fell on my left shoulder, resulting in my only broken bone, left clavicle. Our family doctor taped my arm against my body with the hand outside of my shirt front and functional.

Zola Sloan was what is now called my babysitter. She and her mother, who sold cosmetics from door to door, lived in an apartment above the drugstore on the corner of Main and Oakland. It was reached from the sidewalk by a long flight of stairs. She sometimes watched over me at home, but often when Mom was busy I stayed with Zola at the apartment. This afternoon with my hand tethered to me and wearing a tattered pair of overalls, I caught my foot as I started down and fell, bouncing all of the way to the bottom. When Mom had the doctor examine me again, I had not even displaced the break. These incidents were probably the beginning of my ability to fall.

Dad bought a house, 1115 W. Macon, only two blocks from Main Street to the north and one block to the school on the south. The house had two stories with living room, dining room, den and kitchen downstairs and two bedrooms with a bath between upstairs. The front door opened into a small vestibule from which the stairs arose on the left, and opened to the living room on the right. As most houses of this era, it had a porch across the front with the universal swing. Heated inadequately by a coal-burning furnace, there was

the annual event of coal delivery from the street by a chute to a window in the coal room in the basement. The delivery of tons of dusty Illinois soft coal was a trying time to housewives who attempted to keep coal dust out of the rest of the house. The hot air furnace did little to defeat the chill of winter storms and Dad had to use a blowtorch to thaw frozen pipes each winter. Large cottonwood trees were on the boulevard in front of the house and in the large backyard which extended to the alley was an elm and several peach trees. The elm was a great joy. I climbed it almost daily and had a platform in it. I was less enamored by the peach trees, shoots from which Mom would break off and switch me about the legs when I had been undisciplined. She also used the wooden hairbrush, but I hated the switches worse.

Beneath the elm was my sand pile and a trapeze that Dad had erected for me, swing bar and rings. I hated "Cracker Jack" but the boxes had prizes in them of tiny metal toys; horses, carts, men, houses, etc. So I bought the cracker jack and threw or gave away the contents but kept the toys. Building sand castles, I peopled them with these and played at it for hours on end. One day, a boy passing by looked over the fence and asked what I was doing. Inviting him in, we continued the forts and towns for by now my collection filled a cigar box. Mom called to me to come into the house for something and when I hesitated she said, "Oh! Don't be selfish, let him play with them until you come back!" Bitter lesson!! Boy and toys were gone when I returned a few minutes later. I never rebuilt the collection.

I was quite active on the bar and rings. Using Dad's six-foot stepladder, I jumped from it to the swinging bar, gradually moving the ladder back and mounting a higher step until I could stand on top and leap some distance to catch the bar, swing forward and sail into the sand pile. This was a thrilling and dangerous sport, but falls never disturbed me. One day a neighbor boy from down the street visited me. He tried a few jumps from lower steps of the ladder, but being inexperienced, missed a handhold and fell, breaking his right wrist in two places. I led him home, crying, for his mother to take to a doctor. Remember, no one sued in those days! You lived or died by experience and parents expected such childish injuries without a thought of demanding reparations from others.

A vacant lot across the street allowed me to watch the school grounds. Being a loner, I preferred to play at home until the first bell rang and then run to class. I was not a good marble shooter, but one of the poorer boys at school was adept at it. Mom bought me marbles and I staked him demanding half of his winnings. In this way, I built up a collection of beautiful agate marbles. This too disappeared through the years.

Somebody gave me a white Angora rabbit which grew to be immense. He had a small cage in back and I let him feed in the yard each day or took him to the vacant lot to graze while I watched him and prevented dogs or cats from bothering him. Speaking of cats, Mom loved them! She had a beautiful white Angora cat named Brewster when I was born, but it became so jealous of me that she had to give it away to protect me. No stray cat was turned away from our home and soon we had many, rapidly augmented by kittens. One lanky tabby, Lady, was a tremendous hunter. Barns and sheds along the alleys

were peopled by rats and mice and she stalked and captured enough to keep the rest of the cats fed. I can remember, one day she brought in nine victims, but they were needed as we had twenty-one cats at the time. Needless to say, I learned much about cats and cat psychology during those years. Also, needless to say, I have no memories of any birds that were in the neighborhood except an occasional robin.

I was a redhead, an only child, a loner and lacking in the graces and understanding of competitive social activity. When I played with other boys they called me Red, Carrot-top, Brick and other names, teased me unmercifully and must have thought me strange for when a game of tag, kick-the-can or throw-the-stick was suggested they would make me "it" and after a few minutes "ditch" me and go off to play somewhere else, leaving me counting at the "base". To add to matters of isolation, I was wearing glasses by the time I was seven so could not enter into rough games like basketball, football, or baseball.

A dreamer, I lived in my own wonderful world of clouds, imagination and insects. Two things furthered my personality. Having a redhead's temper, little things sent me into a rage, especially inanimate objects such as a tangled string or rope. Grandpa Phillips would say, "There is nothing so stubborn as inanimate objects!" To control my temper, I would sit on the back porch steps, tangle and then force myself to untangle knotted string or rope. An hour or so of this at a time gradually trained an acceptance of difficult problems.

Children are cruel, not of necessity, but because they have no comprehension of pain or survival in other animals. It is only when a child understands what he is doing and the suffering that he is causing that he desists and, as we know, many adults never reach this state and hunt or kill for pleasure. Along the sidewalk in the backyard were insects, especially black hunting beetles called carabids. At first I collected them and dropped them into a can of water which I stirred until they drowned. They swam frantically for many minutes and when I had tired of this torture, I would pour them out. I soon noted that all were not dead, for when I returned some had crawled away. Gradually I experimented with these beetles until I learned the limits of their endurance and respiration and the time that it took for deoxygenation to kill them. My admiration for their stalwart resistance grew until I no longer abused them.

Animal abuse was more acceptable then than now and at circuses or county fairs little American chameleons (*Anolis carolinensis*) tethered to a safety pin by a bright colored cord around the neck were sold by vendors. Usually they had a board of green plush with the lizards pinned to it. As time went by, I obtained several and Uncle Ned built a beautiful cage of screen for them with a central house and removable roof so that it could be cleaned and the chameleons be given water. I kept this on a pedestal in the front vestibule above a furnace outlet so that they could be warm in winter. I always felt great responsibility for my pets, especially these lizards. It was easy to supply them with insects spring, summer and fall, but most starved to death before the end

of winter. One I succeeded keeping alive for several years. On sunny days of midwinter the temperature would rise until hibernating flies could become active and seek the warm south walls of light colored buildings. On such days I would walk from building to building seeking them and became adept at catching them with a sweep of my hand. These intermittent feedings kept the chameleon alive until spring. I kept a careful record of all that I had fed to them and one of the first scientific papers that I published while in college concerned "Some insects accepted by the American Chameleon Anolis carolinensis." Entomological News, 1938.

Uncle Ned made each birthday or Christmas noteworthy with some special gift. A large sled for sliding on the frozen hills at the edge of town was not used as much as it should have been for I hated winter. To me spring bore hope, summer fruition, fall despair and winter death! One birthday the gift was a sturdy coaster wagon and this I loved. Millikin University nearby, just across West Main, covered a large area with long winding sidewalks over hill and dale and adjacent to Crystal Springs Park. I could coast on these hills to my heart's content and pulling the wagon explore the wooded wonders of the park.

The gift of a bicycle nearly undid me! It was about three-quarter size of an adult's bike and traffic was very light on Macon Street so I practiced riding until I was brave enough to ride it to town on West Main Street. At the center of town was the "Transfer House", a round house and station in which you could wait for all street car routes which terminated or began here. I rode up to the "Transfer House", up a long gentle hill without incident. Coming back down Main Street I gathered speed on the hill, but had not yet mastered the coaster brake. A street car stood at a corner, passengers boarding it and a car waited beside it. Unable to stop, I turned to go around both and coming from the other direction toward me was another street car and an automobile beside it. The street was blocked and the only escape was between the streetcars. The approaching motorman gasped in horror and slammed on the brakes as I swung around the end of the standing car, but that motorman unaware of my predicament started up as his passengers were seated. I yelped in fear and he looked back to halt the car as I rode between them and out of the way. The sides of the two street cars seemed to touch as I approached, but the bike was just small enough that the handlebars did not touch either as I rode through. I never told my mother of this harrowing experience or she would have been rid of the bike; and I learned the use of the brakes. As with most boys the bike was a never ending source of pleasure. I suspect that the two most satisfying things for a boy are his dog and his bike.

Another love swept upon me, a secret love for Josephine Searle. She lived down the block next to the railroad tracks. She was sweet and pretty and sometimes we would play together. For years, clear into high school I built dreams and fantasies around her. I saved her from a thousand fates hardly less imaginative than the experiences of "Hair-breadth Harry". Mom and I would go

to a movie once a week, Friday evening or Saturday matinee. There was always a serial which ended in some breathtaking situation and I built these into my fantasies with Josephine.

Aunt Gertie and Marjorie were visiting us and we had all gone to a movie. I was a squirmer and talked more than I should have. In the serial, the heroine was being pursued down a cliff by a gorilla and the hero saved her at the last moment. Home again, Aunt Gertie who was a stickler for polite protocol (she having a daughter instead of a son) called me before her and proceeded to lecture me on how little boys should act when at the movies. I stood at ease and listened to her attentively, she thought. When she had come up for air I said, "Do you think that gorilla would have got her if her friend wasn't there?" So much for attentive youngsters!! A fertile imagination is a pleasure.

There was a surgeon who had a world famous butterfly collection and he lived in a large house on beautiful grounds with many large trees at the corner of West Main near downtown. The collection was housed in a fireproof building adjoining the house. How I longed to see these butterflies. I remember one year when a swarm of 17-year locusts (*cicadas*) emerged and there were many nymphal exuviae (husks) on the trunks of his trees. Finally I screwed up enough courage to go to the door and ask if I could see some of his butterflies. He acquiesced and led me into a study lined with many cases and took the time to open a few cabinets and let me see the gorgeous specimens. In wonder, I asked him how much they were worth, to which his answer was a story.

Most were not very expensive but sometimes he had to pay a high price. There were more kinds of butterflies in California than anywhere else in the country and one small butterfly, a little blue I think, was known only by a few specimens. He offered a young collector in California a hundred dollars apiece for any that he could find. In a small mountain valley, the collector found that this species was common, so he collected about a hundred and sent them to the good doctor. He ended the story, "Of course, I didn't pay him a hundred dollars apiece! I sent him a check for a thousand dollars and he was pleased!" Little did the doctor know that he was talking to an embryo biologist and entomologist!

The world loved music then as now and modern music was as cacophonous then as it is now, but the muted strains of classical music were in everyone's heart (there were no radios). We had a beautiful upright piano in the front room and, in spite of pain in her hands, Mom would often practice there. To her the rendition was incomplete, but to me and others it was wonderful. On warm summer evenings when windows and doors were open, if she was playing, the neighbors as far as the music was audible would come to their porches and sit in swings or chairs to listen. One evening I dashed out the door on some imagined errand and found the local barber seated on the front steps enjoying her cantata. She was employed by a local theater manager to play a piano or a small organ during the comedy or feature. Watching the movie she could draw from her vast knowledge and play themes that followed the story or the action. Music stores sold sheet music of all kinds of pieces, popular or classic, and she would play whatever the saleslady handed to her so

that customers could know what they were buying.

She was desperately unhappy, not at Dad or me or anything but the loss of her talent. She was beautiful and lonely and there were several men who occasionally came to see her. There was one whom I liked very much. His name was Humes and he had something to do with railroads in Alaska. She and Dad broke up and she began going with Arthur Kinkade who was in the schools in Decatur, some official, I believe. He had a wife who was ill, a son and two daughters. We all called him K. Both he and Mom had started divorce proceedings. To protect Mom whom he loved very much, Dad pleaded infidelity, which I doubt. She moved to Chicago and I remained boarding with friends until finishing eighth grade at Oakland. She sent me money each week for lunches and school expenses and thereby I learned another lesson. I blew it all as soon as received on trinkets, etc. and went without. The financial lesson: "one must restrict one's desires to spend within the limits of one's income and resources!"

In her wisdom, she made one mistake which I deeply regretted. A new junior high school had been built and instead of going on to an overcrowded high school we eighth grade graduates were to take ninth and tenth grades there. Before she left, Mom had bought me a new coverall khaki colored suit, saying that I should wear it at school so as not to get my better clothes soiled. On registration day I dutifully appeared at school in these coveralls looking, I found out, like a lost farmer. All other boys and girls with their parents were in their Sunday best! I was so humiliated that I wanted to creep away and school lost its luster, but in a few weeks Mom called me to Chicago.

Since the school semester was not over and we were not to leave for the west until K could complete his administrative school year in Decatur, Mom wanted me back in school. She had found an apartment near Lincoln Park and the nearest school was a trade-oriented one nearby. It was then that I learned that life was not always the sequestered one that I had known in Decatur. It was in a ghetto and the administrators attempted to give the students skills that they could use for blue collar jobs. Typesetting, metal work, carpentry, machinery, sewing, typing, as well as English and possibly other academics were the curriculum. What other courses I was exposed to I do not recall, but I was enrolled in typesetting and metal work. Since my interest was in nature and my manual dexterity was practically nil (hardly improving with age), passing weeks found me incapable of accurately setting a paragraph of type or in welding a cylinder or cone that would not leak water.

It was on the school grounds that my education was furthered for the students were controlled by gangs. It appeared that two gangs divided the boys. In the barn behind Grandpa Phillips' house where pianos, music boxes and such were stored, I had found a drawer containing many keys of many sizes and shapes, keys to unknown and long-forgotten locks. I had selected a variety and had them on a ring. I loved this collection and carried the ring with me. In the rough and tumble of the school yard games, the ring snapped open, scattering the keys. As a small town boy I still believed that people were honest (a trait that has often led me into awkward situations) so I went to the school office to show them my collection and ask if any keys had been found and turned in.

I was immediately stood before the principal and accused of using these keys to enter and rob houses or stores, and those keys remaining, along with the ring, were confiscated.

Mom gave me a dollar a week for lunches or treats and when the gang members learned of this, I was held at knife-point as I walked to school and relieved of my allowance.

To survive in this atmosphere so foreign to any that I had known I must join in. A burly black boy was leader of one of the gangs so I made friends with him, and one afternoon after school he invited me to his home for supper. We walked the narrow streets and alleys to his family's apartment on the fourth floor of a tenement. I was looked upon with doubt by his numerous siblings, but his mother welcomed me and set a bowl of meat stew before me. It was a happy occasion, but almost dark before I returned home. My mother was never quite free of racism and was deeply perturbed by this and when I assured her that now I was protected from further theft, she promptly withdrew me from school, saying that I was learning things of which she did not approve.

3. *Seattle Bound*



July came and with it K, a 1921 Dodge touring car (the year was 1922), and final plans for the trip west. Loaded, the car had a tent, blankets and camping equipment rolled and tied to the fenders. Clothing, foods, tire repair, tools and other paraphernalia were secured in the back seat, leaving me room to ride beside or upon it, and we rolled west out of Chicago on the Lincoln Highway, then mostly unpaved and gravel except in towns or across unbridged streambeds. Neither

K's nor Mom's divorces had been finalized and to avoid the Mann Act, Mom either walked across state boundaries or took a train or bus between border towns (the Mann Act made it an offense for married people to cross state lines unless with their own spouses). This became a game as we went from state to state, camping along the way, in school yards, at cross roads, or what were ostentatiously known as "tourist camps" some of which even offered cabins for rent and many of which had amenities such as running water and/or "Chic Sale" public toilets.

It was an Odyssey! I remember little of Missouri, Iowa, or until we were deep in Kansas and the sequence of events in a twelve-year old's mind may be confused. The road that we traveled ever westward was straight and seemingly endless gravel. We were informed at one point by a sign "50 miles of dips ahead". "Dips" were strips of concrete across riverbeds to allow the traveler to ford them. Flash floods were to be avoided. It had been raining and the stream before us was bank full but the concrete extended up a slope beyond it. K thought it not so deep, but that the high-wheeled Dodge could negotiate it. We crept forward and at midstream the muffler filled with water and stifled the motor. Water rushed at door level around us. Undaunted, K crawled out upon the tent roll-up and raised the hood. Water had not yet entered the manifold. Wrenches would not loosen the bolts securing it to the engine, but using a hammer and cold chisel, he knocked off the nuts and pried the manifold loose so that gases from the cylinders could escape. Ignited again, the motor roared into life and we drove out to and on the slope where K stopped to let the water drain from the muffler while he tried to repair the damage that he had done. We noisily entered several towns before we found a repairman who could replace the bolts.

Near Oberlin, Kansas, disaster struck when a roller bearing in a rear wheel cracked and stalled the wheel. By careful maneuvering, K nursed the car into town and sought a garage. Removing the wheel the mechanic gazed sadly at the shattered bearing and said, "We do not have parts for such a late model as this!" Then after a moment's thought he said, "Think that there is a Dodge of this model wrecked out in the country some time ago. Let's go see if the bearings are intact and useable!" He took us to a road intersection a few miles away and there in a ditch damaged and disintegrating was a Dodge. Quick removal of a hind wheel revealed the bearing intact.

We were in the true "wild west" now with great pastures horizon bound on both sides of the road. Cattle watched from near and far. Darkness overcame us before we found a level place suitable to camp in. A few yards from the unfenced road we pitched the tent which also canopied the car, spread our blankets and turned to sleep, having eaten earlier. Hours later, trotting horses passed to one side of us and within moments again by the opposite side. Mom cried, "K, we are being surrounded!" and he reached into a bag for a small pistol and prepared to defend us if they rushed us. The dust settled and the night quieted, but no attack came! Next morning we peered out the tent windows to find that we had camped in a fork of the road and the surrounding marauders had only been cowboys returning from a night's outing.

We were approaching another state line and Mom had gone on to a nearby town to meet us. It was raining again and another flooded arroyo held us at bay, even as its waters were slowly receding. I had put on a new pair of oxfords, which Mom had recently bought, to show her my appreciation for them. Jumping from the car, I slithered in the mud and both shoes became caked with it. In an attempt to remove the clinging clay, I kicked and the right shoe came off and arched out into the swirling stream to quickly disappear. It was years before either Mom or K ceased chiding me about this.

The road across eastern Colorado was straight and each rolling foothill rose above the preceding one as we strained our eyes to get a first glimpse of the snow-clad Rockies. The overladen Dodge labored heavily on these slopes and the radiator boiled. In a pasture beneath us flowed a stream and K handed me a bucket asking me to go for water. There were white-faced cattle scattered over the pasture. They resented my approach to the stream and began assembling upon me with curiosity. Being a city boy and having heard that cattle did not like a walking person, I quickly filled the bucket and began the trek back up the hill. As they closed in on me, I ran faster and they hastened their steps. In panic, I dashed to and under the fence, handing K the bucket now nearly empty while the cattle snorted at me from behind the fence.

We reached beautiful Denver. In 1922 it was a city to remember: green parks, wonderful mountain vistas, and cleansing water streaming in the gutters of the wide thoroughfares. From it we drove to see the wonders of the Rockies. Colorado Springs was a nice little town where we found parts for more repair of the Dodge. To the Garden of the Gods, there to marvel at the rose-colored peaks and monuments, and Mom's excitement to see Rudolph Valentino with a party of friends also sightseeing. Up snow crowned Pike's Peak where my fingers and toes chilled and I cried out in anger as K repeatedly made me add water to the boiling radiator. I also learned that lack of oxygen at such an altitude can stifle one.

We were trying to reach Boulder by a mountain route that K had selected. No other car traveled the road. High above the valleys with cliffs scraping the sky, we came upon avalanches of snow. The road was blocked by a narrow slide, and handing me a shovel, K and I dug a path through it that the car could negotiate. Further on, another slide blocked our way. Again, we dug a path through it. Mom was becoming increasingly concerned; when rounding a bend, before us was a great avalanche of snow and ice many yards

wide and impossible to dig through. It was unwise to even try for there might be still more ahead, but the road was only one track wide and part of that glistening with snow and loose gravel. Mom and I got out and held our breaths as K maneuvered the car back and forth along the road's crumbling edge until he had turned it around and we retraced our steps. In the valley below, we found that there was a road to the city through Boulder Canyon. This was one of the most spectacular drives of our trip as the great grey cliffs towered above us.

Gradually we moved west leaving Colorado and entering Utah, our destination Salt Lake City. The gravel road that we were traveling faded into desert, first as diverging paths and then disappeared altogether. We were lost: Maps were available free, at gas stations and K thought that he had selected a route to Salt Lake City. He decided that we had wandered south as well as west and that there should be a main road to the north of us. We intercepted a telegraph line leaping from post to post toward the horizon. "Such lines must go somewhere", K said, "Let's follow it". And across the sandy land we drove, dodging boulders, seeking trails across arroyos that confronted us, the poles ever in sight and sure enough, they did cross a road permitting our interrupted progress to the city.

We thrilled to the music in the tabernacle, enjoyed the beauty of the Temple and other structures, and, of course, went to Saltaire, a playground by the beach, and the Great Salt Lake itself where we rode roller coasters out over its briny depths. We tried to swim in that brine, burned our eyes and struggled to swim where we could not sink in the dense water; then rushed to the bath houses to wash off the salt. And picnicked on the beach! Sixty years later, Lucy and I walked this same beach, Saltaire long since abandoned. I decried belching smoke from a nearby foundry and a local, overhearing me, indignantly yelled, "But you use the metal it produces!" Northward we crossed Wyoming. Along the whole trip when roads were bad to indifferent, we made 150 miles a day, and on good roads our best days were 300. A child's memory is spotty and often disjunct, but I think we entered Yellowstone from the east. It could have been the south gate, but I have no recollection of the Grand Tetons. It was the bears and wildlife as well as the wonderful forests. A brown bear, too small for a grizzly, was crossing the road and we stopped to watch it. Equally as curious, he came up to the car for a handout which we did not have. But there was the tent roll tied to a fender that interested him. He reared up, prepared to open the canvas with his powerful claws, but startled back as K struck the horn and we drove on, convinced not to entice a bear again. Of all of the wonders of Yellowstone, only three stayed with me; Old Faithful which performed then as it does today, but standing alone without the ring of grandstand seats now present.

Morning Glory Pool. Its deep throat and sky-blue water. As other tourists were doing, we dropped a handkerchief in it to watch the cloth disappear, soon to be brought back to the surface. Over half a century later I again visited that pool, watching it from a platform and reading from a placard that such acts had nearly destroyed its circulation and it is not as active as before. We might have stayed at the Yellowstone Inn, but that was too expensive for our budget

so I suspect that we camped some place. Third was the Mammoth Hot Springs. It covered the hillside alone, not with buildings near as now, but was as spectacularly dyed as at present.

Somehow we missed Yellowstone Canyon, but drove near Yellowstone Lake. In Colorado we had stood above the equally as breathtaking Royal Gorge, watched a train following the river's course at the bottom and drove across the great arched bridge, an engineering marvel of the times.

The expanses of Montana left no lasting impressions until we arrived at Butte. How could any traveler forget the corrugated streets of logs that climbed the hills? From here our meandering route straightened to Spokane and across Washington wheat lands to Yakima's millions of apple trees, the flower studded slopes of Mt. Rainier and down the main street of Seattle with the Smith building towering above us.

We found an apartment near the beautiful wooded University of Washington Campus. Beyond its buildings was a forest and summer was not yet gone so a new acquaintance and I thought it would be fun to build a fort there in the forest and have a tunnel leading to it. Before we embarked on this fantasy, I felt that we must have permission so I went to the administration building. My memory says that I sought out the president, but it may have been some other official who smilingly heard me through and gave me permission to dig the tunnel. We worked hard, my friend and I, only to find that a hardpan of granite hardness was only a few feet below the surface so that we could not dig it to standing depth. We could only crawl, having roofed it with limbs, soil and leaves. We had not yet begun the fort walls which were to be at one end of the tunnel when I came down with a bad cold and construction ceased. Weeks later I returned to it to learn the bitter lesson that people do not respect the labor of others; someone had defecated in it and ruined it for us. The fantasy faded!

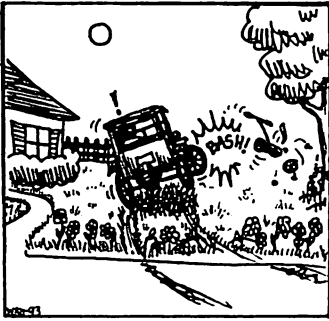
Later Mom, Hazel, K's older daughter, and I moved to an apartment in a small corner building above a drugstore and a grocery at 2302 24th North. This was out near Union Bay and Lake Washington and only a block from Washington Park, a vast forested park in which my golden collie, Tawney, and I spent happy hours tramping, romping, watching insects and wildlife and day dreaming while resting against the damp almost buttressed boles of evergreen trees above. Once, while prone at the base of a vine-covered stump, a slight rustling introduced me to a shoe-button eyed deer mouse that crept among the leaves and around the stump the better to peer at me.

I finished 8th grade, joined Boy Scout Troop 25 which met in a small boat house by Union Bay, and entered Garfield High School as a freshman. The grade school was up a hill within walking distance, but I took a street car up 24th to High School. K got a job with the Puget Sound Bridge and Dredging Company and his first job was to inventory a shipyard which he did so well that they sent him to a job in Texas. Mom worked in a music store and I delivered newspapers in a large apartment complex near downtown Seattle.

Again I learned that people were not always kind. I dropped the papers at the doors or in the mailboxes of my apartment dwelling customers and collected the weekly dues on Saturday. The papers cost me $2\frac{1}{2}$ cents and were delivered for 5 cents. Apartment dwellers are habitually transient and often would not be at home when I came to collect my money. Almost equally as often after a week or so a stranger would open the door, claim that he or she did not want the damned paper and I would receive nothing. Big city newspapers were often not kind to their delivery boys (you may remember the movie "Boy's Town") and my route included only about 50 customers, but on Sunday I would be delivered 75 papers at a cost of $7\frac{1}{2}$ cents, to be sold for 10 cents. I would deliver to my customers and be burdened by the remainder for which I must pay. When I complained I was told to sell them on the street, but I was not aggressive enough to compete with the street salesboys. It was a losing proposition, so Mom made me quit.

Remember this was the days before telecasts and computer print outs, so my next job was as a telegram delivery boy for Western Union, in a large office building downtown. There was a Western Union office on the ground floor and several of us boys waited on a bench to deliver messages to offices as they came over the wires and were handed to us. A few weeks of this and my pale skin became paler and again Mom withdrew me, but we were soon on the move again.

4. *The Terrible Teens*



K had been sent as business manager or accountant to a large construction effort near Garza, Texas; the Garza Dam. It was seven miles from Lewisville as well and eventually impounded Lake Dallas. The divorces of both him and my mother had become final and they wished to marry. We were to drive south in that same Dodge and he was to meet us at Hollywood. The belongings that we could take were piled in the car around me as before, Mom drove and Hazel

was beside her. Tawney could not come with us and I have no recollection of his fate. It was late winter, days of continuous rain, and my mother was in poor health, suffering from an ingrowing thyroid, goiter as it was called then. There was a windshield wiper, but it was hand operated so I stood behind her operating the wiper as we drove along narrow roads through miles and miles of mountains in torrential rains. The strain nearly did her in!

The rains did not let up until we entered California and drove along what is now the great Redwood Corridor. We had no time to explore San Francisco, but hastened on toward Hollywood. We thought that we were approaching orange country and vied to see who could see the first orange tree, but we passed Bakersfield, threaded the narrow winding road that climbed the Grapevine and descended toward Pasadena before we saw our first orange, and that had been discarded by the roadside. Soon we were driving through miles and miles of orange groves past Pasadena and on into Hollywood.

K met us there and Mom gladly released the driving to him for she was almost too ill to stand. Hollywood was the dream; the romance capital of the world. They were married in a little church somewhere on Hollywood Boulevard.

K had taken time off from his work to come to us and we must hurry back. South and west until we reached the edge of the Yuma Desert. The road across the shifting sands was of wood; wood like railroad ties placed across the trail so that they could be shifted if covered by windblown sand, one lane with irregularly spaced wider passing places. We had been warned that there were miles of this and that we must be careful not to slip off of the wood or we would be stranded in the sand. An adventure to creep slowly along this, over what seemed like miles before reaching the hard surfaced desert beyond and on to Yuma. Across Arizona, New Mexico and northeast to Garza Dam site where K had built us a nice screened summer cottage with an oak tree growing through one side of it. It was 1925!

The months at Garza Dam were full ones. K took Mom to Dallas for a thyroidectomy. This was a new surgical technique then and not well understood and she nearly died from the release of toxins of the thyroid. I did not know how dangerously ill she was, but in a few weeks she was back home and normal in my view.

I was reveling in the wonders of north Texas. The construction was a mud

dam four miles long across a valley of the river with cement spillways in the center. Hundreds of men were working there and the construction camp included bunk houses for the single men and several houses for officials with their families. The center of camp activity was a large mess hall. The spillways were footed in native rock and there was blasting at 6 P.M. when the crews were gathered at the mess hall for supper. At this moment a baritone with a loud strong voice would scream three times and the charges would be set off. As primitive as this system was, no one was ever hurt, but once a large chunk of rock was blown for hundreds of yards and fell upon and through the mess hall roof. Fortunately no one was injured, for most were gathered outside waiting for the dinner bell. Once we were returning from Garza and K took a back road past the spillway. We did not hear the danger cry and drove into the fallout area just as the dynamite was set off. No stones came through the canvas roof of the car, but some dented the hood. This reminds me that this was the year when a severe hail storm struck Dallas. Hailstones weighing several ounces shattered tile roofs of churches and homes, bounced from the street through plate glass windows in downtown, injured people by penetrating car tops and killing birds and small livestock. Dallas looked like it had been under siege!

Behind the camp was a woods of oaks and pecan where I found a small stray cur bitch to which I gave a home. She was a sweet dog and I named her Mixie, for her color and ancestry. She and I tramped the woods with the joy and love of a boy and his dog. I also had a horse, almost! When Mixie and I found this old horse back among the trees, it nickered and came to me, knees knobby, a xylophone of ribs, and ragged coat. Its owner had turned it out to die. I pulled grass for it from outside the fence and upon returning home managed to convince K to let me buy a bushel of oats for it. Day after day I took a ration of oats for which it greeted me and let me pet it. K hurraed the whole thing and said that if I fattened it and took care of it, the farmer might come by some day, see it, and take it home to finish working it to death. So it happened, the farmer led it away one day while I was in school.

School was at Lewisville. It was consolidated, in a brick building, with eight grades on the first floor and four years of high school on the second. Lewisville, of only slightly greater population than Garza, was seven miles from the dam site. The business district, three blocks from the school, provided a drug store of the time; ice cream and soda counter. We kids would steal off to it during the lunch hour and I learned to relish root beer floats.

It is redundant to repeat the observation made by so many that one's life is colored, directed, even controlled by the impacts of teachers along the way. Here I was guided by B. F. Tunnel the high school principal who also taught agriculture. Each student was required to plant a crop, raise livestock or produce some product which he/she could sell, keeping accounts of costs and profits. Being a transient from the construction camp, I could not very well grow anything, but the Dallas Times had asked me to deliver papers to customers at the camp so I had a small route. Unlike the Seattle paper, this management was considerate of their boys and supplied me with only the numbers that I needed. So I had a small income and could use the enterprise

for my school project. Learning of my interest in insects, Mr. Tunnell urged me to continue in this amplified by woodlands that were full of wonderful arthropods!

He and other teachers and friends wrote in my autograph and memory book:

The high school youngster who knows well and good where he is headed for certainly has his course well started, and I think that is one compliment you deserve - you go about your work with a definite, tangible aim. This really makes the course shorter, for it eliminates unimportant details. Keep up that entomology craze of yours, it will fill your days with worthwhile accomplishments, and your purse will always be velvety, too. It is really an open field.

You are a good student, a good sport, and I am proud of you as a friend.

B.F. Tunnell

* * * * *

Lewisville High
Feb. 8, 1926

Dear Elliot,

Elliot we've enjoyed having you in our school very much. You not only helped in making our school but our school has helped you, I am sure. Elliot, I wish you every joy and success that life has in store for you and when you are gone and far away from dear old "L.H.S." please think of us and let us hear from you.

Don't forget a friend,

Wilma Watson

* * * * *

Lewisville, Texas
Feb., 1926

Dearest Friend,

You have been an ideal student in L.H.S., for a few years.

Elliot as you have not been here all your life (as I have) you seem to enjoy this school and all of its work. I wish I were just half as smart as you. If you always succeed in life as you have in your school work you will be of some great help to the younger set. One thing I have learned about you and that is you are a lover of animals. That shows you have a kind heart. May you live to be a success.

Dot Compton

* * * * *

Dear Elliot:

I am very glad to know that you have thought of me when you wanted space filled in your book. You are a good "sport" when it comes to taking some very hard jokes. There are very few who think of animals having feeling the same as a human. When you leave here you will be thought of as a very ambitious person and will be a friend to you. Some make fun of you but they do not think that you are trying to learn what some others already know. I am glad to be in L.H.S. with you.

A friend

Eddie Sargent

* * * * *

You have always been on the job, and delivered the goods. I am sure you will enjoy your work, because you make it so.

Don't forget ninth grade algebra in Louisville High School, and your friend and teacher.

L.E. Preston

During the summer, K had given me a job as water boy on the dam where a great dredge sucked up mud and debris from the river bed and poured this through 30 inch pipes onto the levies. Crews of roustabouts controlled the ends of the pipelines adding and removing sections as the mud built up the levy. In the hot Texas sun, this was rough work and I carried one or two buckets of water with a dipper to each crew all day long, building up strong shoulders that I still possess. These hard drinking, foul language men were bossed by a massive foreman named Black and called Blackie, who gave them hell when they tried to ply me with liquor or cigarettes. They became intrigued by this skinny redhead who talked and knew about bugs and they often showed up on the job with cans containing odd creatures that they had captured. Blackie taught me much about construction and in spite of his drunken violence, kept me under his wing.

It wasn't long after we arrived from California that I met a Texas denizen. Up on the main road, a hundred yards by path from our house and through the woods was a small general store. I started there after dark one evening when something landed on the back of my neck and I slapped at it. It startled me by squealing shrilly and when I swung the flashlight to see what had fallen from me there on the path was a beautiful long-horned beetle; a Texas representative (and there are many of them) of the wood boring cerambycids. I picked it up and it squealed again. This sound, probably of protective value then the insect is caught by a bird or other predator, might startle its attacker into dropping it. Such sounds may also have courting or territorial functions for I have heard males in tropical forests of Malaya squeaking when squared away to fight. The sound is made by moving the prothorax up and down rasping the surface joining it to the mesothorax. It also taught me never to strike at something that alights on me in the dark; a good lesson for tropical woodland travelers.

But to get back to Mr. Tunnell and his agriculture class. Each year at Texas A. and M. College in Houston, there was a crop grading and livestock judging exhibition and competition. High schools from all over the state sent teams to participate and Mr. Tunnell coached us boys in grading cotton, corn and other crops and in judging livestock. There was an entomology category too, in which I wanted to compete. This fair was at the end of the school year!

Since there were no school buses in those days, Mr. Tunnell hired a flatbed truck for the three hundred mile trip to Houston. With our luggage, we climbed onto the straw-strewn bed of the truck and ten hours later, over rough roads, a bunch of tired and sore-bottomed boys arrived at a barracks where we were given cots and blankets. The contests were to begin the next day and after orientation we broke up into our judging teams.

My interest was in living insects, later in their ecology and I had little interest in commercial control. Killing insects except to collect them for identification was not my forte. Enamored by what they were and how they lived, I had practically memorized the thousand page "Introduction to Entomology" of John Henry Comstock by the time I entered college. When I walked into the contest room to compete there before me were many boxes of insect specimens, most were common insect pests of Texas, and these were no

problem. I recognized them all. But one cabinet held bottles of insecticides and there my meager knowledge failed me. What were the uses of the white powders, purple powders, fumigants, oils, etc. etc.; their names and the insects for which they were recommended as controls?

Before I left home, K had said, "Win first place and I'll have a reward for you!" My grade was 96.4% and that of the winner was 96.7%. At fifteen I was second best in the state. At home K said, "Second best is not good enough in this life. You get nothing!"

Two other memories arise from this trip. As soon as I was free I sought out the Entomology Department of the college and there I found a young man mounting specimens. He was performing a technique known as "inflating larvae." I watched avidly and he taught me the technique which is still widely used for preserving moth and butterfly larvae. A cut is made across the rectum of a dead larva and the body contents rolled out with a glass tube. The empty skin is then attached to a small rubber double-bulb hand pump and inflated to natural size. Inflated in this way, it is thrust into a small oven and quickly dried. Supported on a wire it can now be pinned with adult moths or butterflies to show life stages. The colors may fade with age, especially green, but specimens in my collection now nearly seventy years old are still recognizable.

The contests lasted for several days and on the last evening there was a banquet in a great hall, probably an auditorium or gymnasium. Hundreds of us were seated at tables extending the length of the bunting decorated room. My chair was at the end of a table by the exit from the kitchen through which the waiters carried great trays of food. The meal was over except for dessert, the program was about to begin and the waiters were rushing to finish serving. One man carrying a large tray of apple pie above his head slipped as he came through the door. The whole tray of pies, ice cream and dishes crashed upon the table before me as I ducked. Such a wealth of pies that I could not eat among the shattered dishes.

There was no bus to school but usually Mom, K, or one of the other families would take me to Lewisville, so I usually arrived on time. But after school was another matter! Often I was forgotten! I stood along the roadside hoping for a ride, sometimes shivering in the Texas Blue Northers that swept across this country. Even when Mom was ill or in the hospital, I was never completely forgotten nor had to find a place to sleep for the night, but the bitter uncertainty of waiting had a profound affect upon me. If it can be avoided, I never make other people wait for me when I am supposed to be present. I can wait patiently for others, but I cannot create the anguish of them waiting for me.

Love came again in the form of Nannie Delle Burrow, a share-cropper's daughter also attending Lewisville High. Their small farm which I did not get to visit was somewhere near Lewisville and she loved animals the same as I. She had a pet pig, a survivor from a litter her father had sold. Each day I heard about this pig which was rapidly becoming a porker! One morning Nannie Delle was in tears as she walked with me to class. Her pig slept under

Dear Elliot:

I am very grateful to get to write in your book. I cannot express my thoughts in words about you, for they can't be expressed. I like you because you are a friend to dogs, cats and things that can't help themselves.

Nannie Delle Burrow

the barn and during the night the barn had fallen down, killing her pig. Tearfully telling about it, she said, "and the barn fell down and killed my pig! I cried, Momma cried and Papa cried!"

Halloween was an important occasion! Being a loner, I always tried to do something different, and usually was disappointed, but this time I had an idea that was a humdinger! In the woods, I had found a horse skeleton the skull of which was intact. I painted it white with gold teeth and mounted it upon a pole in such a way that by pulling a rope, its mouth would open in a cadaverous grin. It took me some time and experimenting to perfect it. Did you ever make a "Tit-tat-toe"? You take an empty spool from your mother's sewing basket, cut notches around either end, mount it on a bent wire so that when you pulled a string around it, it would spin. Placed against a window pane and the string pulled, it made a most gratifying rattling noise. With my tit-tat-toe and the mounted horse skull, I planned to creep up to neighbors' houses Halloween night, rattle a window and raise the grinning skull.

K was a cabinet maker and carpenter deluxe and all of his tools in shining mint condition were razor sharp. I was not permitted to use them, but could use an ax to chop firewood. I am not adept at manual efforts (as evidenced by my failure in the trade school in Chicago) and a few nights before Halloween I was using his lethal ax, chopping at an oak log. The ax slipped and slid into my left foot, penetrating shoe and instep. I went into the house, Mom looked horrified at the streaming wound, poured ointment into it, wrapped a towel about the foot and we drove to the doctor in Lewisville. There he removed the shoe, cleansed the wound and sewed it together with nine stitches. No local anesthetics were available and the nerves were still in shock. Mom had to leave the room as she watched me shake as the needle penetrated and closed the bleeding lips. I didn't mind it when the needled entered the undamaged skin at the side, but coming up through the torn flesh it was excruciating and I shuddered.

K made me a pair of crutches of light wood and I swung between these until Christmas, so there went the horse idea for Halloween. Coming down the main stairs at school, I learned crutch manipulation the hard way. They pitched me forward and I tumbled down the flight in a great clatter of crutches. I picked myself up as teachers ran from the rooms to see what had happened, swung between the crutches and on to class. Crutches didn't stop me from delivering my papers either, but did inhibit forest exploration.

K considered Mixie a nuisance! In spring she came in heat and dogs began to gather. While I was in school he shot her and buried her, I did not want to know where. For this I never forgave him!

Summer came and the construction was in trouble. It was to take four more years before the levies could be completed and secure enough to support the water behind them that was to be Lake Dallas. A reorganization came, K and Mom went to other jobs and I went to Danville, Illinois, to be with my

father and stepmother Evelyn who lived at 1304 E. Main. Then followed my junior and senior high school years. Years of great happiness, teenage marvels and mistakes as I basked in the warmth of another great teacher, Miss Ruth Ernest in biology. So many memories flow from these years that I know not what tales to spin.

Evelyn was Catholic, French, from a druggist family in Kankakee, an excellent cook who taught me what wonderful foods there were in the world, and she was completely urbanized. The natural world was unknown to her and she was totally mystified by this naturalist teenager who descended upon her, disorganizing her lovely home, rearing moth larvae in mason jars in the windows of his room, bringing home all manner of unearthly things! Dad had given up traveling for Hess and Clark when he married her and was dealing in stocks and bonds, so he was at home and for the first time I had opportunity to know, love and admire him. When the stock market crash came in 1929 and bonds plunged to nothing, Hess and Clark let him road sell for them again, but I had by then already returned to Texas.

I had two pals, a preacher's son with vision only in one eye, Roland Gillette, and the brother of the town's typewriter repairman and sales, Paul Reck. Paul was a gentleman who, like his brother, could repair a typewriter and never get a smudge on his white shirt or ink above his finger tips. Rolly and I were bums and we got into many fun escapades.

Mom loaned me 300 dollars as a bond to the Curtis Publishing House permitting me to be the agent for the Saturday Evening Post, Ladies Home Journal and Country Gentlemen. Dad bought me a Model T Ford Panel truck for 25 dollars and I was in business. Rolly and I spent hours of evenings trying to improve the motor.

There were no headlights; it was magneto operated; hence the lights worked only at high speed, like twenty miles an hour. I decorated it with signs and quips (Pay as you denter, Road to roam, She died when I choked her, Do not run to exit, This is a one way car, 55 years of public service, etc.) This was my steed! The self-starter was a crank and in the dead of winter could be started only by jacking up a hind wheel, leaving it in gear and spinning the crank.

1-17-27

D.H.S.

Dear Elliot:

You are an ideal friend to everyone you get acquainted with. Your "dinner" and "after dinner" talks have made me romantic, eager for adventures, and have made me take more interest in animal life. I could sit for hours listening to your talks because they are worthwhile.

I hope your friendship will last forever, in school and out in the world.

Paul Reck

* * * * *

1/18/27

Dear Opponent:

I still believe with all my hearth that "evolution" means the bettering of the same species while "transvolution" means, what you call "evolution," the changing from one species to another by the bettering of the original.

If there is any mistake in this "thesis" excuse it.

Always waiting for a challenge, I am,

Roland A. Gillette

I roller skated to school in good weather and used the streetcar (Toonerville Trolley) in bad, but after obtaining the truck, drove it. There was no parking problem at the high school and I was probably the only junior who owned his own car. The High was in a new building and the 1928 class was the first four year class to graduate from it.

Since there were inadequate headlights on the car, I avoided being out with it after dark although for emergency I carried a large flashlight with both red and clear bulbs, shining it forward along the street or out the back if a car was approaching or a policeman in sight. Such a vehicle was not conducive to girls and I had but few dates. Anna Tasky sometimes went to a show with me and a few others, but the parents of a girl named Lucy Fairchild who sat in front of me in biology class wouldn't let her go out with me. Miss Ernest was my love! Almost every afternoon after classes I went to the biology lab where she let me use the microscopes and other equipment or help her prepare for the next day's classes. I spent many happy hours preparing microscope slides of insects that I collected, many of which are still in my collections. I am sure that she enjoyed my exuberance for she laughingly never hesitated to mount the bare seat of the truck and let me take her home after her work was finished. Her parents lived near the University of Illinois campus in Urbana and rented rooms to male students, where I stayed for my four undergraduate years. Later I was saddened when Ruth broke a leg and was recovering when struck down by an embolism.

Z-Z-Z-Z

The mosquito is singing, Oh! Hark!

Z-Z-Z-Z

And he always tunes up in the dark

Z-Z-Z-Z

He has spectacles made for the night,

Z-Z-Z-Z

So he's able to see where to bite

Z-Z-Z-Z-Z-Z-Z-Z-

Ruth Ernest

* * * * *

April 27, 1928

Dear Elliot,

When you are famous as a bugologist (excuse the slang word but I don't know to spell the real one) I will think of how we used to halfway fight in Biology class. Truthfully I hope you will be successful in life.

Lucy Esther Lou Fairchild

Rolly's parents were long suffering and I always said that his father had to be a forgiving preacher to put up with us. Soon after I bought the Ford, Rolly was teaching me to drive. Model T's were famous as recalcitrant vehicles

that tried their drivers, for if you turned sharply, the front wheels would cramp, throwing the car violently to one side and over if you were driving too fast. At the end of a driving lesson, I turned into the Gillette's driveway and cramped the wheels. The car jumped out of the driveway and across the lawn running over and breaking a lawnmower left there. Mortified, I backed it into the driveway and went into the house to apologize to Rolly's mother for having damaged the lawnmower. Still professing my embarrassment and chagrin, I backed out of the front door to the porch and turning, stumbled and kicked six milk bottles left there for the milkman. They shattered on the sidewalk.

We borrowed his father's outboard motor and rented a boat to explore Lake Vermillion one summer day. Neither of us thought to tie the motor to the boat in case its attachments released. As would be expected, we were in mid-lake and I was handling the throttle and tiller when the motor slipped from its moorings and twisted free of my hands. Rolly jumped in after it, but it had already disappeared into the depths. Trying to azimuth our position, we spent several days dragging a grappling hook back and forth. We actually caught it once and slowly pulled it to the surface, but upon breaking the surface it immediately slipped away and we never saw it again.

My magazine agency was not lucrative, but kept me busy on weekends. I seemed to be proving that a teenage entomologist was neither a good builder nor a good businessman. Several boys had magazine routes, delivering the Saturday Evening Post to their customers, but none were effective salesmen of Ladies Home Journal or Country Gentleman. I supplied retail outlets at stores and shops in town as well. The Curtis Publishing office believed as did the Seattle newspaper that by sending more magazines to me than I ordered, they could stimulate me into more active selling. The Saturday Evening Post was the big seller, stimulated by Norman Rockwell covers. It was unbelievable that this popular magazine should drop from the scene a few years later, only to be resurrected in recent years. The Country Gentleman was not widely read in Danville, but always seemed to me to have good articles. The company did not push it, rather they plied me with numerous Ladies Home Journals. At the end of each month, I collected the unsold copies, tore off the covers and sent them to the home office to delete from my account. The agency earned spending money and when I closed the account to emigrate to Texas, my mother got most of her three hundred dollars back!

Having poor eyesight which required glasses I could not enter into competitive sports but by tying the temples to my head, I could do calisthenics and tumbling. I became a cheer leader, and with Jack Miley who taught me, cavorted on the auditorium stage or in front of the playing field bleachers, doing clown tumbling as we roused the crowd to cheers for the team. I became fairly good as a fall artist and clown tumbler which extended into college where I participated each year in the annual circus.

How do you like my face?
How do you like my figure?
If girls don't like me now,
Wait 'til I get bigger

Like a telephone pole
Jack Miley

Halloween was still an important holiday to me and was celebrated in Danville. Hundreds of people in costume promenaded downtown along North Vermilion. I donned a mask and old clothes and paraded drunkenly with them, falling time and again. Clowning can be fun, but should be used with discretion. In this I was not too sagacious. Suddenly entangling my feet and falling prone before a young lady while on a date to a movie or sweetshop proved not a way to impress her favorably. Buster Keaton was my role model and I considered him the consummate fall artist that he was, but I never convinced myself to step from the running board of a moving car into a rolling tumble as I had seen him do in his comedies. Tumbles, rolls, falls, even falling down stairs were not difficult although I carried many bruises from inadequate timing. I devised a way to ski down a flight of stairs with my shoe soles just touching the lip of each step. Maintenance officials in public buildings discouraged this act also. I have carried this lack of fear of falling all through life and it stood me in good stead in tree climbing, cave exploring and studying the crown of the tropical rain forest in Malaya.

Travel and exploration filled my library: "Royal Road to Romance", Akeley "In Brightest Africa", everything that Martin and Osa Johnson wrote, Livingston, Roy Chapman Andrews had explored the Gobi Desert, Beebe in British Guiana or diving with his bathysphere. This was my destiny! I wanted to study insects the world over and especially in the tropics.

Our class graduated in the glory year of 1928! Everything was gold, glittering and big business and then came 1929. Milk 5¢ a quart, bread 5¢ a loaf, 5¢ for a hamburger, a T-bone steak dinner at Walgreen's Drug for 35¢. Money, jobs, what were they? In the winter of 1927-28, Dad and Evelyn had adopted a baby girl who was named Mary Theresa. Life became cluttered with bottles, diapers, cradles and walkers and I was somewhat in the way with my jars of bugs, boxes of pinned specimens, and books. I boxed them all, sold the Ford to a junk dealer, and early in the summer boarded a train for the long ride to be with Mom and K in Brownsville, Texas.

"It is not just as we take it,
This mystical world of ours -
Life's field will yield as we make it
A harvest of thorns or of flowers" -

So says the poet! Here's hoping you make it in "flowers".

M. Rhoads

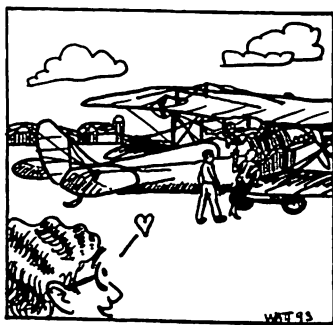
* * * * *

Scientific thinking requires not merely the ability to analyze facts, but also to suspend one's judgment until all the evidence is presented.

J. S. Parker

P.S. I realize you already have this two-fold ability and give my cordial wishes for its successful use.

5. Texas Again



The long train ride from Illinois penetrated the vast distances of Texas where you could stand on the platform of the terminal observation car and watch the track as a pair of shining streaks disappear without a bend in the distant horizon between trackless mesquite plains. At times we passed through oil fields where the rape of distant woodlands created a forest of derricks. Mom, K and the heat of southern Texas met me in Brownsville. K was managing the construction

of the Gateway Bridge adjacent to downtown Brownsville and terminating in Matamoros, Mexico. They had rented an apartment at 1550 W. St. Charles at the edge of town several miles from the construction. I was 18, full of energy and curiosity, so no sooner had I unpacked than I walked back to the bridge, hatless in the midday heat and returned full of the interesting things that I had seen, the nearly completed bridge, Fort Baker, the turbid Rio Grande, the town itself, lawns of flowers and pretty señoritas.

K immediately put me to work doing odd jobs about the construction, painting, oiling, drilling holes, clambering over the steel struts and supports above the water. We finished paving the roadway, put in sidewalks and guard rails and built a road from the south end of the bridge to Matamoros itself, on which I painted by hand the center line, the entire distance.

Dealing with the latino mentality was an ever more challenging operation for K than building the bridge. The single span from U. S. to Mexico was one of the largest of the time, and steel for it was designed and built in Birmingham, Alabama, shipped to Brownsville, and assembled. Everything that crossed the International Line at the river's center was subject to duty. Any material to be used on the Mexican side K bought in Mexico, demanding quality, but avoiding duty taxes. This perturbed the local officials, but they respected him as he beat them at their own games. Cement, wood, bricks, nails, glass, etc. etc. were all bought in Mexico, to be used in Mexico, and paid for with pesos. But this could not happen with the steel of the bridge itself! It must be of one source to exact specifications and this time the officials stroked their black moustaches and smiled. They had K where they could profit by American dollars.

The duty on the half from mid-stream to the Mexican piers and approach was many thousands of dollars. Seeking the best market, K bought silver Mexican pesos at premium prices. How, I would not venture to say, but he saved the Puget Sound Bridge and Dredging Company a bundle. These sixteen thousands of pesos were portioned into bags of equal value and stacked on a flatbed truck watched over by shotgun armed guards and under a fanfare of news reporters and cameras driven across the bridge to be delivered to the National Banque in Matamoros. With a receipt for the entire amount of duty in his hand K grinned his triumph at the laughing officials, boarded the truck, and returned to U.S.

One of the construction foremen was a handsome young man who had a Ford of much the same vintage as mine had been, only this one lacked the body and was little more than the frame with a cushion on top of the gasoline tank. Both models of Ford (mine and his) and many other cars of the day had gravity feed systems to fuel the motor, so one sat on top of the gas tank from which the fuel flowed by gravity into the carburetor. It was not an unusual sight to see local beauties mounted on the seat of this vehicle, skirts or scarves flying as they drove to dinner or a dance.

The foreman gave me jobs to do in the building of the custom house at the American Terminal. One was to put metal lath on the walls ahead of the plasterer, but I reached too far from the top of the ladder and plunged to the floor, ladder and I in opposite directions amid a welter of bent sharp-edged lath. Next I was to lay oak flooring in one of the rooms. I was meticulous in the effort taking great care to fit the tongue-and-grooves properly and to avoid marring the wood with my hammer. K came in to inspect the work and hit the roof. For once he didn't bawl me out! Instead he descended upon the foreman, but how was I to know that I was laying the floor in reverse, the boards inside out!

Winter came on and officials in the custom house at the Mexican end complained bitterly that it was cold and they had no heat. We laid a pipe beneath the superstructure of the bridge to carry gas to them for their comfort. Not only were we charged duty for every piece of pipe beyond the middle, but they attached a meter and charged us duty on the gas they used to warm themselves!

There was a jail at the edge of town, a large square three storied brick and stone structure. Unheated, it had high barred windows to let the breezes flow through it on hot days, which were most of the year. The first and second floors were more secure, but the third was for miscreants. They sat on the window sills, feet hanging out between the bars, sang, and shouted at passersby until their short terms of occupancy expired. Many Mexican laborers and artisans were employed on the job and wages were paid each Saturday afternoon. We worked 24 hours a day, seven days a week when pouring concrete or doing other heavy work, but usually Sunday was free. Many of the paid employees wandered happily to the nearest saloons or to their favorite ones and, some over-imbibing ended up on the third floor of the jail. When K and the foreman arrived on Monday morning, they would take a head count and learn from those in attendance who were those in jail. Hanging onto the window bars, they sang and watched, cheering for K as he drove up to bail them out and to curse them with good St. Louis teamster's vocabulary.

It was the glory of the insects of this sub-tropical land that entranced me. My collections grew by leaps and bounds; fascinating mantispids, rainbow colored cicadas and lantern flies, giant scarabs or Rhinoceros Beetles, great colorful longhorned beetles, and a multitude of tiny and equally as beautiful forms, plus a wealth of moths and butterflies. I delved into the secrets of glow-worms which had specially designed extensible necks and reversed jaws so that they could feed on land snails, and grew to emerge as fireflies that illuminated the warm star-lit nights. Every day was one of study and I kept voluminous

notes. Girls, who had time for girls, with an unknown micro-world to be explored. Sixty years later, thousands of vials of alcohol still preserved these specimens and along with others, were donated to the museum of the Illinois Natural History Survey.

Came the 4th of July, opening day for the Bridge. Construction ceased, K closed the books, and I spent weeks greasing all metal equipment remaining while K took a job of auditing the books of an oil company in Tampico, Mexico. I had saved nearly a thousand dollars, enough to pay for my first year in college.

The love of flying is in my blood and, with Charles Lindbergh the national hero, every red-blooded American boy wanted to be a flyer as now they want to explore space. In 1920, when I was ten, a lame World War 1 pilot came to Decatur with his canvas and wood Jenny biplane. His lameness was from having taken a bullet through this lower leg and knee during combat. His noisy single motored Jenny was patched and wired, but airworthy; two cockpit seats, that of the pilot and that of the passenger or co-pilot, in front with stick, instruments and all. He was barnstorming, that is, for a fee he would take passengers for a ride away from and around the pasture which served as his landing field. K, Mom and I went to watch. He could squeeze two people into the front cockpit and Mom who was always venturesome, wanted to go. They paid the two dollars per head, mounted the step, clambered into the front cockpit, and off they roared. I was enthralled and wanted to fly so badly that I could taste it! When they returned and the noisy motor was silenced, I begged to go alone. Finally they acquiesced and I climbed into that vehicle of dreams, looked at the bewildering array of sticks, throttle, gauges that I had promised not to touch, and looked through the propeller that the pilot spun into life.

We negotiated the bumpy field and into the air and I was sold. It was nearly thirty years before I could learn the art myself, but in those and subsequent years I logged in hundreds of hours of flying as a passenger.

Lindbergh had come to inaugurate an airfield at Brownsville and to sponsor airmail delivery. Tri-motored Fords were plying this field as well, but he landed in a smaller plane and I even had a glimpse of him as he strode through the crowd. It had been nine years since I had ridden in that Jenny, but the fire was still there. Mom and K were going to Tampico by air. There was no other alternative but that I fly with them.

Our flight was a five-passenger Douglas aircraft, mono-wing, single motor which took several hours and one refueling stop to Tampico. The refueling stop was about half way, at Soto Lamarino where fishermen kept a stock of gas that the airmen used and replenished as the need be.

And where did my college money go? Much of it for the plane fare (a hundred and fifty dollars, I believe). Upon landing at Tampico I went to a bank and changed my cash into Mexican gold pesos. I received but a small handful for \$150 US and saw that they charged me a percentage for making

the exchange. Taxi drivers and shop keepers were dismayed at these gold coins for they did not have the change for them. Back at the bank I changed the gold to silver, again paying a fee to do so. With pockets loaded with nearly a hundred dollars in cartwheel-like pesos (the exchange was more than two to one) I went back to sightseeing. My horde was stashed in pockets, suitcase, anywhere to relieve the weight. Upon my decision to return to Brownsville, I made the third trip to the bank. What a shock! I received only a few dollars for all of that silver and paid a fee for the third time. This lesson in international finance and exchange fared me well when traveling about the world in later years.

The flight back to Brownsville was so eventful that I wrote a long letter about it to Mom and K, as follows:

"Dearest Mom"

"I've had an experience of a lifetime as I said in my earlier note. It sounds like a fairy tale!"

"I'll begin at the beginning and tell it through. We drove (via taxi) from the hotel and got to the field without killing any urchins, dogs or the like and as soon as our luggage and ourselves were weighed we packed the plane and piled in. The plane took off at one o'clock. We, consisted of four aviators and myself. There were Mac, the pilot, a Mr. Dawsley, who is with the aviation company; Mr. Hugo, husband of Mrs. Hugo also with the company; and Mr. Mason, an oil geologist who had flown in the service and was also an entomologist."

"We had no more than gotten off the field than we saw a heavy fog coming in from the coast. We soared to four thousand feet, for the fog was 3500 feet thick and was thick as soup. We could not see a thing but a billowy mass when we got over it and could not find the coast. The coast is generally marked by a drop in the fog contour and if we had found this we could have gone on. We soared in and around the fingers of fog and tried to find an opening, but there was none so we had to go back. The field had no fog over it so we landed and waited. At two o'clock we again took off and tried for the coast. The fog had blown inland so we were all right. It was murky, but the coast line was clear. This pilot kept us at 2,000 feet and there was a terrific headwind. We just barely moved! It took us two and a half hours to reach Soto Lamarino which is a little over a hundred and fifty miles north of Tampico. It was five o'clock and we had not enough time to go on to Brownsville before dark. We had no more than unloaded before the guy there at the fishing camp jumped on us. It seemed that in going down to Tampico, Mr. Boew took the last ten gallons that they had and promised to bring more back. But you remember, he had to make another trip that afternoon and did not get back. The fishermen claimed that they lost five hundred dollars on the deal because they had no gas and could not fish on Monday. We wanted to stay there for the night, but they swore up and down that they had no room for us and were not especially glad to have us around. So they very kindly told us of a ranch eighteen miles north and seven miles inland where we could get accommodations. They surely did us a good turn that time!"

"We boarded again and started out to find the ranch. After much hunting

around, we saw a number of buildings painted white and, although the men at the camp had said that there was a landing field near it, we couldn't see any so the pilot put the plane down in the front yard. We climbed out and a young lady and an elderly man came out to meet us. The Ford Trimotor plane had been there the night before and they had accommodated 17 people. They were glad to see us and said that they were always glad to have someone drop in on them."

"We grabbed our duffle and had the plane tied down and went in. The girl was 19, about my height, dark brown hair bobbed, full face not pretty but wholesome, even well-kept teeth, rather heavily built and shapely although overalls make a girl a shapeless mass. She was the Nannie Delle-type. She hailed from San Antonio and her name was Betty Blackwon. The man was tall, about six foot two, dark complected, sharp featured, had stone grey hair cut short and looked to be a Spaniard or maybe he was just a tanned American. He owned the ranch and its name was Estacion Adelaida."

"The ranch house was a great big two-storied affair that must have at one time been built of adobe and covered over with stucco for it was over a hundred years old. I'm going into detail because I know you would liked to have been with me. The place was literally clothed with pelts and they were pelts of cats. lions, (pumas), jaguars, civet cats, bobcats and all kinds of cats. A hundred and ninety pelts in all and they were all killed on the ranch. The ranch at the time had seven thousand head of cattle on it. Pelts covered everything! They were the only rugs, table covers, chair and couch coverings, drapes and everything. Over the back of a couch they had the latest kill, a jaguar which was eight feet long and the latest kill of a mountain lion six feet long was over a chair. There were horns and pictures of all kinds of animals on the walls and skulls of cats on the mantle. As drapes on either side of the living room were two cloaks that had been used by old priests. There were also guns and knives and fishing tackle around. This sounds a bit gory, but the colors were in rich browns of natural wood and smoke-stained rafters. It was so homey and comfortable, we felt at ease at once."

"Soon the men were swapping yarns about cats, aeroplanes, revolutions, snakes and everything. You know how I enjoy listening to yarns! A fire was built in the great fireplace and we all sat around and told the stories until dinner time. They had a Crosley radio and we soon were getting good music from WLW. At about seven-thirty we had dinner. Sweet potatoes, pork sausage, gravy, biscuits, peas, coffee and dessert made up the menu. We all consumed about six dozen biscuits and came back for more of everything. After dinner, four of them began playing Bridge and I swapped stories with Mr. Reeder (Miss Blackwon called him Harry). I got his name from a letterhead that he gave me. When the Sharkey-Stribling fight started, we all stopped doing what we were doing and listened. That's something, isn't it? A hundred and sixty miles from the nearest town and thirty miles to the nearest railroad and we were listening to a fight staged in Miami through a station in Fort Worth. After the fight we all turned in."

"Some of us got beds out on a sleeping porch and I got a cot there. It was surely fine sleeping with lots of covers and fresh sea breezes. Oh yes, I

forgot to mention that they had a couple of cute kittens and a pup. I put in a fine night and woke up with the rising sun. There were three of us on the porch and we lay there and watched some of the cowboys run down a bull, rope him and pull him into a corral. After that we got up! Miss Blackwon said that she tackled little ones and threw them, but that she wasn't exactly eager to try any of the older bulls. We went down and had a fine breakfast."

"All of us were having such a good time that we hated to leave. In fact, I could have stayed there for the next six weeks or more. It was a perfect heaven for insects. I picked up a beautiful butterfly on this morning in the yard and the night before when we were building the fire, a great moth flew down from the flue and I tried to get it. It fluttered into the flames though, and before I could get to it, it was nothing but a charred mass. I got a scolding from Betty for tearing up the fire trying to get to the moth, so I had to make it again. At which, of course, I didn't do so well!"

"You can't realize how exciting that place was. You read about doing such things in stories, but they seldom come true. I got the biggest kick out of that stay than anything I believe I ever did. I'm surely glad that I didn't go by boat. It is just the place to go if you are hunting excitement; riding, hunting, fishing, flying, and everything. Miss Blackwon flies a little, rides, hunts, fishes and is generally a lively one."

"This morning Harry got to spinning tales about revolutions and his experiences and showed us a flock of pictures. He has a couple of albums a foot thick. When we asked what we owed him, he said that if the pilots would drop a package of papers every once in a while it would suit him. Then they got to discussing using his airport as an emergency field and sending the mail route over his ranch. I suspect that it will be fixed that way for it is the halfway mark between Brownsville and Tampico and it would repay the company a thousand times to give him the protection and connection with the world. Well, anyway, I hope that they do, for his hospitality was wonderful and he deserves to be treated right."

"We took off at a quarter to nine and had favorable winds. We passed the plane used to ship fish from the fishing camp and it was flying very low over the water. Later we learned that it was out looking for us, not knowing that we had landed safely. We arrived in Brownsville at ten five and landed in Matamoros at ten fifteen. It took us twenty-one hours to fly from Tampico to Brownsville and oh, what a full 21 hours. We went through the customs all right and then when we got on this side we had to be vaccinated again. The previous serum must have been dead for mine is taking already and is swollen and itchy. (Amazing that it was taking as I had been vaccinated several times in the years before) I found Phil on the job and am going to work tomorrow. So ends a perfect trip."

"I mailed your passport and Marjorie's present. Bought myself a pair of socks, turned in my films and put my money in the bank. Then I came home and straightened this place out. It is all right now and I am going to be all right. I got everything fixed by seven-thirty and have been writing this letter ever since. When you come right down to it, I have about as much fun as anybody my age that I know of and will have a store of memories to dwell

upon in my old age. The trouble is that the more I fly, the more I want to fly. I'll never get enough flying no matter what it holds in store for me. (This was prophetic for I have logged in at least a million miles and am still flying).

"Well, we pour cement tomorrow. My lightening bugs are all right. I hope that you are all right. Tell K that if he runs across any of my clothes to send them to me.

Lots and lots of love"

Soon we returned via that long straight rail trip through Texas to Decatur, Illinois, where K worked with a friend of his who had invented a water pump with a single moving part and was manufacturing it. Mom and K bought a house, 185 W. Wood St., and I stayed with them until registration time at the University of Illinois.

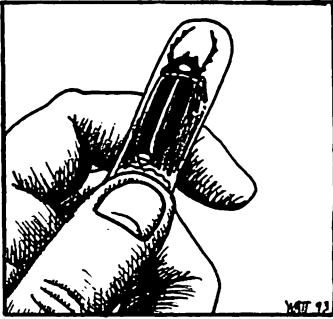
The Polar Ice Company of Decatur delivered ice from house to house. As most ice boxes held only up to 100-pound blocks, a square red and white cardboard sign was given to each customer, the sides of which were marked, 0-25-50-100 and you put the sign in a window visible from the street with the number upright indicating the pounds that you needed. In summer, ice wagons pulled by massive horses plied the streets stopping before each house with a sign in evidence. Ice was frozen in 300-pound blocks, loaded onto the wagons each morning, and the iceman using a coarse ice-saw cut them into pieces of required size. This meant that chips were scattered on the floor and these were a delight to youngsters. On hot days there was always a crowd around each wagon asking for chips and icemen were a cheerful lot that indulged the kids. Our ice wagon was pulled by a big red horse named Dan. Dan knew the route so well and could recognize the signs, so the iceman rarely mounted the wagon seat to control the reins, only at intersections or in traffic. Dan plodded along stopping at each house while the ice was being delivered and we all loved him. One morning I climbed up to the seat and sought to guide him on to the next stop. When I took ahold of the reins, he swung left in a U-turn in the middle of the street, cramping the front wheels and terrifying me. The iceman hurried out and kids scattered for cover while I sat transfixed. Instead of bawling me out he climbed up beside me, took the reins and brought the horse back in position, explaining that I had pulled the left rein and the horse had responded that way. I apologized fervently for meddling and never tried that trick again, but it stayed with me and 25 years later it helped when I began riding on a Nebraska ranch.

This incident had happened nearly ten years before and I went to Polar Ice to find out if Dan was still alive. The great horse barn was now a truck garage, but one of the older employees remembered Dan and assured me that in old age he had been put to pasture with other faithful horses as they mechanized the ice delivery.

I obtained a job with the Polar Company, driving a small truck and delivering butter, cottage cheese and other dairy products to groceries and delicatessens about town. I also worked in the creamery when not on the route,

helping make cottage cheese, pasteurizing milk, making ice cream in great vats, and separating cream. I loved it, drank chocolate milkshakes but did not gain weight. My teenage experiences as a driver and novice were so prosaic that they are not worthy of relating, typically immature decisions in driving, in handling money, in sales, etc.!!

6. College Years



With the approach of Fall 1929 it was time to leave the fold and enter college. My goal was a PhD in entomology! Dad had a degree in pharmacy and other members of the family were high school graduates, but I would be the first to go on to higher degrees and this was an ambition. That and entering the world of exploration and explorers!

Ruth Ernest's parents lived at 1104 W. Stoughton only two or three blocks from the entomology building on the campus. The home had four small bedrooms and a bath on the second floor and Mrs. Ernest took in male roomers. She said that she preferred boys because they were often missing, but if she rented to girls she had girls and boys both about the house. Mr. Ernest was retired and had very little to say about running the house, Ralph Lane who had been a student at Danville High and had known me in math classes was to be my roommate. We were of opposite personalities; he calm, philosophic, a self-withdrawn mathematician, I a noisy extrovert. We shared the same room for four years and remained the best of friends. He did not understand biology and I did not understand math. Therefore we walked separate paths both enjoying our academics intensely so that we were kindred souls. He was from a farm north of Danville and married a Chicago urbanite by the name of Kay Peacock, whom he claimed could hardly tell a cow from a horse. They referred to their union as the Peacock Lane, lived in Texas, had two daughters and a son and Ralph died of a heart attack in his forties.

4-27-'28

Dear Elliot, etc. ad infinitum: Here are some don'ts - don't write poetry, don't take chemistry, don't copy book reports, don't go to detention more than three times a week, don't skip school, and above all, don't argue about evolution with English teachers.

Your fellow sufferer (from what?)
Ralph Lane '28

Since I had arrived at Urbana with less money than I had expected to have, Mrs. Ernest let me have a room if I made beds in the other rooms and if I would scrub her kitchen on weekends. Either that or I was to pay seven dollars a month! On the campus I found a restaurant that would take me on as a bus boy in the evening. This job lasted until eleven o'clock each evening and I hardly lasted that long. I wanted to do well in classes, had my eye on Phi Beta Kappa, and needed the time to study, so after a few weeks I resigned. A small restaurant by the campus served good meals for 35¢. A five-dollar meal ticket lasted me nearly a week, for I skipped breakfast and lived on 70¢ a day. Thirty-five cent meals then included meat, potatoes, vegetables, bread, a drink and dessert. Lane had less to live on and did not get a job so his expenditure was 50¢ a day. I bought apples at a nearby orchard for 50¢ a bushel and we

allayed our hunger by piecing on these.

At the Entomology Department, Dr. C. L. Metcalf quickly noted that I knew more about insects than many of his students and he gave me a little job as student assistant. Pay was hourly and I managed to put in enough hours that I was making about \$50 a month and saving most of it. I put out specimens for beginning labs, helped in grading papers, and learned the art of sealing insect specimens in alcohol in glass tubes. Almost all of the teaching specimens were in these tubes, permitting their examination by low power microscopes, and they were far less easily broken than pinned and dried specimens. As I worked with the student material I was permitted to prepare some of my own specimens as well. I have many of the beautiful creatures that I collected at Brownsville still available to show, sealed in glass 60 years ago.

"Think big - Talk little - Work hard - See clearly
Test repeatedly - Record plainly - Conclude carefully - Pay cash
and Be kind. It will be enough!"

C.L. Metcalf

Urbana, Ill.
January 15, 1931.

* * * * *

Because I would be wise and wisdom find
From millions gone before whose torch I pass,
Still burning bright to light the paths that wind
So steep and rugged for each lad and lass
Slow-climbing to the unrevealed above,
I teach

Because in passing on the living flame
That ever brighter burns the ages through,
I have done service that is worth the name
Can I but say "The flame of knowledge grew
a little brighter in the hands I taught."

I teach (Woodward)

Wm. P. Hayes

* * * * *

The staff of the department included W. P. Hayes who taught insect anatomy and physiology, W. F. Balduf who taught insect life. He was a mild-mannered man who loved insects as I did. V. G. Milum was the bee specialist, and there were a couple of assistants whose names slip me. Metcalf was the powerhouse among them. He and W. P. Flint had just completed their monumental "Destructive and Useful Insects". W. P. Flint was the State Entomologist and dwelled in a small two-storied brick building with a greenhouse at either end, down by the auditorium and astronomy buildings. By the end of the school year, at the urging of Dr. Metcalf, Flint put me on the staff as student assistant. He was a hard disciplinarian and a difficult man just like K, so I got along well with him. One time Metcalf suggested that I attend a faculty reception which I did, in a rented tuxedo that was too small for me. Metcalf introduced me to many dignitaries, but Flint was stony-eyed for he

considered it a breach of etiquette since I was not faculty. The next morning he prepared to fire me, but again Metcalf saved my bacon. Dr. Metcalf's forte was insect control and I always felt that I must have been a disappointment to him since I had little or no interest in insect control as a profession. Flint had a sweet young secretary who was lame and she could calm him when he became angered or upset by the rest of us. It was she who years later found him dead at his desk, the victim of a heart attack.

* * * * *

I think you must have been intended for an Entomologist as every time I look at either end of this building I am sure you should not be trusted with whitewash.

W.P. Flint

* * * * *

There were the usual required courses of English, History, etc. for freshman, but I held up under them and finished my year with grades good enough to be elected to the freshman honorary Phi Eta Sigma. Flint kept me on and my summer income went up from a few hours to a salary of \$125 a month. I was wealthy! With this salary each summer I graduated three years later with money in my pocket, more than most graduates of that era. Actually, I went on to Masters and PhD degrees before I earned that much again, in Nebraska.

During several late summers, I made surveys in wheat fields for Hessian Fly infestations, but it was the Codling Moth that was demanding the entomologist's time. Dr. M. D. Farrar and others were working on biological control of this insect. Behind the campus was a cemetery and beside the cemetery an apple orchard known as Took's orchard (pronounced Tucks'). Tests of all kinds were made here, but the Codling Moth was still in abundance. Farrar and Flint were working on two aspects of the control, the rearing of millions of tiny egg parasites, little wasps known as *Trichogramma minuta* to be released in orchards, hopefully to parasitize the Codling Moth eggs which the moth deposited on the outside of young growing apples. The other approach tried to take advantage of the habits of the larvae. When full grown, they leave the fruit, crawl down the tree or drop to the ground where they hide, spin a light cocoon, and hibernate to emerge as moths next spring. There were several generations a year and the larvae often pupated beneath loose bark on the tree trunks. They would enter corrugated paper interstices as well so I was given the job of scraping loose bark from the trees and tying corrugated or inert tarpaper around the trunks. Larvae by the thousands would seek these and when I brought them into the lab the moths were reared, mated, and laid their eggs on small discs of paper. In petri dishes *Trichogramma* were reared in these eggs and periodically thousands of them were released in the orchard.

* * * * *

It has been a pleasure to know you both as a friend and co-worker. Your

ambitious nature will carry you a long way in this world. I can not give you any advice so will only add a line as stated by a wise one -

"Do not shift your mouth into high gear, until you are sure your brain is turning over."

Best wishes to you, Farrar

* * * * *

Dr. Farrar was also a chemist and he tested contact insecticides which could be used to saturate the corrugated paper and when the larvae crawled into the holes to pupate they would be killed. I checked these bands for insect mortality as well.

The insects and spiders that dwelt under loose bark took advantage of the tarpaper bands and moved behind them. I became fascinated by these and began my own study of them, putting bands on forest and shade trees as well and continuing the study through the years until bird study took all of my time. I found that this loose bark fauna was a synusium or a little ecosystem all its own and its diurnal movements were important to overwintering birds such as Chickadees and Nuthatches, but this long-term study never did get published.

As indicated above, one of the side effects of this orchard study was that Lane and I nearly lived on apples.

Being in the orchards so much, I had plenty of time to watch insects. One summer I tried to spend 24 hours with one long-horned beetle. This was the beautiful Milkweed Longhorn *Tetraopes tetraophthalmus*, named for the fact that the bases of its antennae split the compound eyes into four segments. It was eight hours before the beetle got tired of having me watch him and flew away. This was my initiation to the fact that wild creatures watch you whenever you are in their territory. Another time I spent 24 hours with one Milkweed plant recording the insects that came to it and what they did. Like so many others these studies never saw print. However, some did get written including my senior thesis about the life of a tiny beautiful Psocid that lived in a greenhouse feeding upon black sooty mold that covered the leaves of some plants.

Chemistry was a four credit-hour course and it was going to ruin my chances for Phi Beta Kappa. The lab work was simple. I could do the experiments, but what was happening to the molecules in these experiments was beyond me. Valence made no sense at all and why one molecule had an affinity for another or why they broke into radicals are still unknowns in my mind. With A grades all along, I made a 43% on the final lab examination, way below failing. The final exam was still before me and the instructor assured me that I could still make an A if my final test grade was high. There was only one way to do it, memorize the book! I bought four large sheets of cardboard ruled them on both sides with each column an element that we had studied, hydrogen, oxygen, helium, sulphur, etc. From the book and my lecture notes I copied every equation that we had been exposed to, placing them in the columns of elements. These filled all eight sides and took several days, a total of 24 hours of work. Then on the day before the exam, I leaned these sheets against the wall above my desk and spent eight hours memorizing them. Next

morning I spent three hours in the exam; read each question, closed my eyes, read the answer from the board that I had memorized, and wrote it down. I made 98% on the exam, walked out of the room, shook my head, and the sheets disappeared from my memory along with most of the knowledge of chemistry that I had acquired.

At the gymnasium were acrobatic wheels made in Germany called the Rhonrad. Lane and I were fascinated by them and were soon spinning them on the hardwood floors. They could be thrown flat and spun back up on edge like a dinner plate. Looking for new worlds to conquer we put them on the ice skating rink. Spun on ice, they were dynamite and deadly, taking off into space and bringing you down with bone crushing force. We put on demonstrations at the half-time in basketball games. I developed a harness to hold my feet securely to the shoe supports and then could spin the things without my hands.

Attaching my glasses with a string tied at the back of my head so that I would not lose them, I did not have to worry about astigmatism and myopia ruining my timing. I did clown tumbling at gymnastic events and performed at the annual circus. Expert tumblers would spin and whirl down the long mats followed by this guy who would try the same feats and unfold in the air to plunge to the mat with a great groan. Taking a pair of roller skates, I had a blacksmith reinforce them with straps of iron which made them less maneuverable, but sturdy and then I practiced tumbling on them. This act went over big too, but I did not reveal the bruises I accumulated from all three performances. Lane and I both won our "Circus Keys" for our acts.

We were inveterate, compulsive and congenital punners and when deadened by study would pun ourselves into hilarity. Such a proclivity for puns hardly made us welcome in English and philosophy classes, but the Daily Illini had a humor column to which students could submit their gags and jokes. Both of us submitted many, Lane under the pseudonym of "Dearly Beloved" and I as "Diplodocus". After four years of this, we were duly sworn into the Mu Pi Sigma (Mutual Praying Society). Lane came from a religious minded family and when his grandmother saw the key, a pair of hands in a prayerful position, and learning that it was the Mutual Praying Society she was happy that he was such a good boy!

In many colleges the heads of departments give the lectures in the beginning courses. This was true at Illinois! Dr. Metcalf introduced the students to entomology, Dr. Van Cleave presented beginning zoology, etc. The head of the Botany Department was a wiry little man named Dr. Hottes (very famous and well known in botanical circles) and he usually gave the lectures in beginning botany.

At the time this ribald story was making the rounds. A man named Schultz in a small town was well known among the ladies for the size of his penis. When he died rather suddenly, the mortician had him on a slab and he (the mortician) could not resist covering him with a sheet so that only his immense penis remained exposed. Women who happened to be in the morgue

upon seeing this would exclaim, "Oh! Oh" Schultz is dead!" This amused him until his wife passed the corpse and cried, "Oh! Oh! Schultz is dead!"

Dr. Hottes lectured in a large hall with rows of seats above him and a long desk before him. In the space beneath the desk he stored an immense dried algal seaweed several meters long. He always demonstrated this large long nearly cylindrical plant when lecturing on plant phyla and evolution. This particular morning he was discussing algae animatedly when he reached beneath the bench, took the specimen by one end and lifted it into view. A voice in the back of the room exclaimed, "Oh! Oh" Schultz is dead!" The resulting hysteria and merriment brought the lecture to a close.

Not at Illinois but in a small mid-western college there was a secluded garden behind the men's dormitory where the boys sometimes sun bathed. One of the college athletes was there in the warm spring sun, asleep on his back. Several of the wags among his roommates had an idea. They quietly approached the sleeping figure and slipped a yellow Eastman Kodak film container onto his penis without waking him. Then they retired to watch the fun.

The Dean of Men, who was considered by many to be a heller, had a beautiful daughter and some of the boys had risked his ire by dating her. She happened to be cutting across the campus that afternoon and passed close by the garden and its sleeping victim. The boys were both gleeful and apprehensive. Had she seen? The story swept the campus, but nothing happened for several days and they concluded that she had not. The Dean taught a class in Political Science which was required of the male students. He had finished his morning's lecture and there was a lull in the room. Reaching into a drawer beneath his podium he took out a film container, walked to the desk of the young man involved, who sat in a front row, placed it before him and said, "You may have use for this!" In the ensuing uproar the class was dismissed.

Girls? Yes, there were three girls! The beautiful Wesley Foundation had many functions for students during the year and at weekends; parties, games, discussions and religious services. Fraternities and sororities had their own group activities, but the non-aligned students sought other outlets for their social needs. There was no great Student Union then! I was invited to only one fraternity and when they learned that I was broke, buggy and lacking in social graces, I was quickly dropped. Whenever time permitted, I sought Wesley Foundation for entertainment. There I met Dorothy Folden from Peoria who roomed at a house not too far from the entomology lab. We had many wonderful times together, meetings at the Foundation, movies, long walks, etc.,

Sand piles cribbage at Prehn's "dominoes on Sunday!!! Oh! "Wolves of chaos" with two soft lights "have you got any money? I'm broke!" "India - Africa travel" dreams hopes happy memories, aren't they?

Kim (Dorothy Folden)

and I was feeling romance, but she was in love with Bill, a high school chum not appreciated by her parents, later marrying him and living "Happily ever after". Dorothy did some writing for local news papers and liked the pseudonym of "Kim", but to me she was "Dot". If I misplaced or forgot something my usual comment was "I for dot!", which gradually nauseated Lane. I also had other inane phrases used regularly. Knowing Dot's good sense of humor Ralph and his friend Jim Fletcher prepared the accompanying "legal document" with Dorothy's response!

"WHEREAS: and wherein we, the undersigned and hereinafter named personages do jointly, severally, and corporately demand, petition, ask, and request the hereinafter named Dorothy Folden that she, through her well-known and most excellent courtesy, to kindly and beneficently deign to consider the propriety and expediency of forming some new expression which may constructively and pleasantly replace and destroy the most exceedingly monotonous and too-frequently used quotation made by one H. Elliott McClure upon all and sundry occasions, without due and necessary regard to modern etiquette, namely, "arms and legs were strewn all about, and everything was bloody, and more people were killed." Due to his constant and inane repetition of these words, we are driven by our inalienable rights to the pursuit of life, liberty, and happiness and by all our instincts of humanity to move and humbly ask that he be provided and furnished with some other phrase, that variation may make life less weary for those who are helplessly forced to listen to him. It is, then, with all reverence that we suggest and approve of the formation of some new phrase by the hereinbefore mentioned Dorothy Folden to insure the betterment of the conditions of humanity in our state and in the whole world.

Witness our hands and seals as of the
twenty-fifth day of November, A.D. 1929."

J. P. Fletcher

R. E. Lane

(Signed without recourse)

"Whereas and wherein two very legally-minded gentlemen, namely J.P. Fletcher and R.E. Lane have, by means of an official document received by me, signified their repudiation, repugnance, and utter dislike of a certain expression used by one H. Elliot McClure, namely "more fun, more people killed, blood all over and legs and arms just everywhere," an expression which the two learned gentlemen sadly misquoted; and whereas and wherein I am but a "weak member of the feminine sex" in opposition to two such specimens of stalwart "he-men," the logical, conclusive, and natural result of their most authoritative demand would be a graceful submission to their request. But, whereas and wherein, I consider the aforementioned, oftquoted and much discussed phrase one of the worthiest specimens of the literature of today, and whereas and wherein this phrase has been said to have all of the qualities which make truly good literature and whereas and wherein the poetic effects of the phrase, when effectively given, are second to none, and whereas and wherein I spend so much time writing official documents to legal-minded young men that I haven't time to think of a new phrase to replace the aforementioned, to the request of the aforementioned gentlemen, I therefore say, "APPLESAUCE."

Dorothy Folden.

Later I met Lucille Copper who lived down the street from the Ernests. Her mother had begun boarding students to help make finances meet costs so I forsook my \$5 meal tickets at the restaurant and began eating there. Lucille's father was named Dallas and to me that denoted "Texas" with the result that a check to him for my meals read "Pay to the order of -- Dallas Texas".

Needless to say it bounced!

* * * * *

December 19, 1931

Fountain spray in colored lights,
That essay on Parasites,
Walks through rain for blocks and blocks,
Learning stars through your binocs,
Watching pictures through panes lit, 'n'
Always finding some stray kitten.
Exploring deep beneath the lock
Of the canal at "Hungry" Rock.

True, and sad
You liked to pun.
But it was
A lot of fun!

Lucille

Lucille was a poet as can be seen by her entry in my "memory book" and we dated for a few months which did not develop into a romance. However, through the years, as with Dorothy, I kept in contact with her. In 1992 she published a collection of some of her poems under the title "Ephiphanies" from the introduction of which we learn she received her BA from University of Illinois 1933 (same graduation exercises as mine) Honors in English and 27 years later a MA in English from the University of Wyoming. During which time she had, in 1954 written a prize winning essay for a Better Living Home contact sponsored by Radio Station WIMS in Michigan City, Indiana, her reward being ten thousand in cash and five thousand in furniture, and also she had married James Marshall (1939) and raised a family of two sons and a daughter. This marriage went on the rocks in 1963 and she turned to teaching English at the University of Wyoming and at Arapahoe Community College in Colorado. She tried matrimony again in 1967 with Alexander Chiluck, happily, until his death in 1985.

In response to her gift of the book of poems I referred to our good times together some sixty years ago as "halcyon times". Here is her answer (life patterns change with decisions as simple as the one she made here):

Thanksgiving Day
1992

Dear Elliott:

Your prompt response to my book was a pleasant surprise. I like your choice of words: "halcyon days." I remember them well:

The day we climbed in Turkey Run State Park in Indiana,
pretending we were mountain climbers. We hadn't even seen
any mountains at that time, at least I hadn't.

The day we went to Decatur, Illinois, and saw the colored

floodlights on the Staley Building and the fountain. Just a few days ago I was talking to someone who had come from Decatur. I asked if those lights were still turned on at dusk in the town square, and was told they are still shining, after all these years, and I was delighted.

The day in spring when we carried our books to an apple orchard and studied under the trees which were in blossom and shedding their petals.

"Cammy," your cute chameleon. Isham, the beautiful Persian cat which I couldn't bear to part with. I hope your mother forgave me for that.

When the University gave a circus or gymkhana of some sort and you performed a stunt which amazed me. Dressed in a clown costume you ran about falling flat on your face with your body rigid. That showed tremendous control. Then you progressed to suspending yourself inside an enormous wheel, controlling its passage by shifting your weight.

I was frightened to learn that you expected ME to get in that wheel. I worried for days about that. I was never much good at athletics. Let's admit it. I was a scaredy-cat. I didn't even tell you that, but since you kept insisting I foolishly decided the only way to get over your expectations was to stop seeing you altogether. So rather than fall flat on my face, I chose to let the halcyon days fall flat. Do you still like puns?

Lucille

The third girl of college was Alice Shoup, a bosomy rough-neck whom I met on ecology field trips, and no romance flowered here either. She was a rugged out-doors person who might have stood me well in later years!!

In my junior year I met Dr. V. E. Shelford and came completely under his spell. Many magnificent teachers have guided me, but he was the greatest of all. An entomologist whose specialty was tiger beetles, beautiful predators of sunlit paths or nooks in prairie and forest. Beginning a taxonomist, his field studies gradually carried into the concepts of ecology. Ecology, environment, ecosystems and other common words and concepts of today were new and poorly understood or subscribed to. Shy, but strong in his convictions, he had been deeply hurt by the rejection among his peers and he faced the world with a broad frozen smile on his lips. Once at a national conference I heard him all but booed from the hall, because the attendant scientists did not understand his presentation. Those of us who loved him learned to watch his eyes, not his lips. I still loved insects, but I was becoming disenchanted by the stress placed upon their control. Each discipline had plied me with information about insects, plants, mammals, mollusks, invertebrates, etc., but they remained as unrelated towers of knowledge. Shelford put them all together in the vibrant world around us, ecology. He did for the environment as Aldo Leopold did for wildlife in "Sand County Almanac" fifteen years later, imprinting the complex world in the eyes, minds and hearts of his students.

His course was Field Ecology arising from the overcrowded and somewhat dilapidated "Vivarium Building" at the north end of the campus along a

polluted creek known as the "Boneyard". He was an organizer, perfectionist and somewhat of a disciplinarian. Only one hour of one day a week was devoted to lectures. Almost every weekend we boarded a bus to some locality for study in the field, and the entire Easter Vacation was devoted to a trip to Reelfoot Lake in Tennessee, the Indiana Dunes or other spectacular ecosystem. He even took students to Churchill, Manitoba and to the Rocky Mountains or Yellowstone on extended summer trips.

He brought back a beautiful large stonefly from Churchill which Theodore Frison of the Natural History Survey named for him and which I again collected several years later. The buses were large, adequate and on time. We had tents, field equipment, meals on time; he even called ahead to have food prepared at restaurant stops along the way with a reserved parking place in front for the bus. It was a rule that tardy students wasted valuable time so you were charged a penny per person for each minute that you were late. Holding up a class of 30 for five minutes cost you \$1.50, a tidy sum then. We had an Ecology club that met each Friday afternoon to discuss subjects or papers that he brought before us, and the money collected from tardy students was used to buy cookies and soft drinks for this club.

Canadian Arthur Twomey was a field assistant and among the students was Alice Schoup. She was undaunted by anything that was tried, could cook over campfires, tramp in the rain, camp in zero weather, do most of the things that would have been expected of Osa Johnson.

At the beginning of the course, Shelford would assay the special interests of each student. Those with specialties, Twomey an ornithologist, me an entomologist, botanists, aquatic naturalists, etc. Having reached a destination such as a woodland or prairie he would have us search the soil, sweep the herbs and shrubs, shake the trees, count the plants, measure the tree trunks, record all that we saw or heard and he called upon the specialists to recount what they had found. Twomey without having gone from us would list the birds by song or sight and V. E.'s eyes would shine for he appreciated this ability. My general knowledge of insects stood me well and his eyes sometimes smiled at me. On one occasion they lighted up when I called out a leaf-legged bug which had flown near him, recognizing it by its flight.

We went to Reelfoot Lake in Tennessee that Easter holiday. Reelfoot Lake at the junction of the Ohio and Mississippi Rivers is an extensive lake caused by a cataclysmic earthquake along the New Madrid fault in 1806. The vast forest and bottomland sank as the land heaved. The forest drowned and massive trees rotted off at the water level, filling the lake with water cured timber so valuable that a hundred years later the logs were mined for fine lumber.

It rained incessantly! The paths that we were to have walked were hip deep from the swollen lake. Shelford plunged ahead followed by a bedraggled but dedicated smattering of students. We performed our usual studies of the fauna and flora. He wanted to know what invertebrates were doing in the water-soaked forest around the lake. The cabins that we were to occupy had leaky roofs, our beds were wet, we chilled, sniffled, caught cold, got chafed by our soaking pants, but it was a wonderful experience and my report rated an

A. The Explorer's Club honored intrepid men facing great odds in a hostile environment, but Shelford's students plodded on unrecognized!

An older graduate student from China, rooming at the Ernest's as well, had this to say:

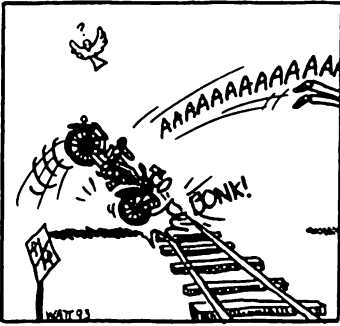
Jan. 5, 1931

Dear Elliott:

As a student of science to a student of science I have the pleasure to say
"Scientific research is one of the most international forms of human endeavor."
Wishing you a great success in science.

H.C. Yuan

7. Age 21



It was 1931 and I was approaching the monumental age of 21. Having been busy through two summers, Mr. Flint decided that, in the fall slack before classes reconvened, I could take a two-week vacation. For months I had been planning a coming of age vacation trip, a trip to Utah and the Rockies. The plan was an ambitious one; drive to Denver, then through the mountains to Dinosaur National Monument, south to Bridges National Monument, on to the

Grand Canyon, back to Mesa Verde and the cliff dwellings and north again to Denver. All to be accomplished in two weeks, and I nearly did it, but had to leave out the Grand Canyon and Dinosaur which I had to wait 64 years to see.

In view of the planning, and hopeful that I could cover the land rapidly, I bought a motorcycle. It was a big four-cylinder Harley-Davidson, almost more than I could lift to upright position, and it cost me \$85. Two wheels make an unstable vehicle and I hoped for a sidecar to make things more portable, but such was dear and would have cost me another hundred. Like a recalcitrant horse, this machine was out to get me! After riding it a few weeks, I realized that its sole aim was to kill me. It threw me on a railroad crossing, pitched me off at a busy downtown intersection when it got caught in the street car tracks, tossed me up into someone's front yard as I tried to make a U turn, threw me into a field along a mud-rutted road, blew a front tire on a long trek from Urbana to Decatur, and a wind and rain storm skated me from one side of the road to the other.

I got the message and took it back to the secondhand dealer who didn't want it. But I convinced him to give me \$65 in return, which I then invested in a 1921 Chevrolet touring car. This in turn cost me \$50 so I saved a little. Four wheels proved much more stable than two and, although already ten years old and worn to a frazzle, the car looked capable of taking me to the mountains. Roland Gillette was working in Denver as a city park maintenance man and hoped to go on into the mountains with me when I arrived. A vain hope it appeared, since he had not worked long enough to have accumulated any holiday time.

The most obvious thing wrong with the car were the bearings. In those days the connecting rods were fitted to the crankshaft and padded with a soft metal known as babbit. This had worn so badly that the rods thundered and banged. I had removed the pan and the connections and filed away the babbit so that the rods fit more snugly to the shaft. But in so doing, the connections were no longer round and in some, the babbit had fallen out, so I simply filed it down more and replaced it.

The trip started on 29 August 1931, and this is its log.

Odometer 25168, miles for the day 54.

Expenses: Gas 4 gallons 53¢.

I left Urbana early in the morning and soon arrived in Decatur where I spent the rest of the day with Mom and K.

30 August: Odometer 25222, miles for the day 323.

Expenses: Gas 7 gallons, 87¢, 4 gallons 53¢, 5 gallons 62¢. Bridge fee 35¢. Connecting rod \$1.20, labor \$2.50.

I left Decatur at 0530 and everything went well during the early part of the morning, until I arrived at the Mississippi River. The fee to cross the Father of Waters was 35¢ and beyond the river began the long series of hills to the uplands above it. On the second hill and about ten miles east of Monroe, Missouri the bearing on No. 3 gave out. The connecting rod tried to get out of the motor, but fortunately I had the hood down. I limped on to Monroe and bought another connecting rod. After two hours of arduous swearing, sweating, and industrious cussing, two mechanics succeeded in getting it into the motor. Alas, due to the vehemence of the old connecting rod the crank shaft was flattened on one side and the old girl clattered as she ran.

I continued on across Missouri having to fill the radiator repeatedly as it boiled on most of the hills. My cash ran out and I had to cash a traveler's check to buy more gas. Then the distributor head went haywire and I had to fix it. Finally, about 35 miles east of St. Joseph, Mo., at 1930 I was overtaken by a cyclonic rain storm which nearly blew the car off of the road. The storm was accompanied by a marvelous electrical display and stereophonic thunder. Found a tourist cabin in which to wait out the storm.

The old car was getting pretty good mileage for I had driven 336 miles on 20 gallons, 16.8 miles per gallon, but the trip was becoming expensive, with worse to come. Already I had spent \$6.27 not counting food and I was only two days out. Gasoline was fairly reasonable; 16 gallons for \$2.02, or 12.6¢ per gallon.

31 August: Odometer 25545, miles for the day 322. Expenses: 2 gallons 25¢, 7 gallons 91¢, 4 gallons 52¢, carburetor repair 50¢.

At 0600 I left the unnamed tourist cabin at Cameron and when I arrived at St. Joseph I looked up a mechanic to repair the carburetor; which he did and I was on my way again. Ate breakfast at Wathena, Kansas, lunch at Marysville and supper at Smith Center. I had mapped out the trip with estimated mileage for each day, but yesterday I lacked 37 miles of my goal and today I was behind by 60 miles. Still doing pretty good on gas though: 14 gallons had cost \$1.82 so it was now up to 13 cents. Like yesterday, I'd covered only about 320 miles, but I'd hit three storm centers, got into two deluges, had to stop in St. Joe for the carburetor repair and finally had to stop in the night because of a wind storm which made night driving impossible. A good fifteen hour day!

Among the gear that was piled in the back seat were a cot and blankets. I did not own a tent and this was in the days before downy sleeping bags available at Kresge's (now K-Mart). If the weather wasn't threatening, I could sleep on the cot under the sky. Sacked out in Phillipsburg!

1 September: Odometer 25942, mileage for the day 348. Expenses: Gasoline, 5 gallons 67 cents, 5 gallons 95 cents, 4 1/2 gallons 42 cents.

Left Phillipsburg at 0530 and continued on west. I had no trouble during

the day except blew out one tire. Kept rolling until about 1500 when I stopped for a bite at Joes, Colorado. The roads in Colorado were terrible. After I passed Cope, there were only two gas stations in 174 miles. If these 174 were pulled out level they would have reached back to St. Joe. The hills were all rough and steep. About half way through them I began to worry about running out of gas. I stopped a fellow and asked him how far it was to the next station and he said, "Wal! About 20 miles!" I made it, all right!

The country was beautiful! Nothing but dried hills with nothing alive in sight but ants, very few cattle and no people. This was the land of vast rolling foothills that swept up to the Rockies which gradually loomed in the background and I drove on and on. After the "20 mile" gas station, the roads were better and I reached Denver at 2030. The Gillettes lived clear across town and I had to spend a few minutes locating their home. I knocked at the door and Mary said "Come on in!" When they saw me, they all let out whoops. Rolly was out dating and didn't get home until late. I was already asleep for it had been a long day, 0530 to 2200, but he awakened me when he got in. The family looked the same, except that Mary had grown up.

2 September - Rolly and I spent the day working on the car. During the morning we drove around to see the city. Then in the afternoon we took up all of the bearings on the connecting rods. She finally ran better after we had worked on her. Bought a tire and tube, \$3.15.

Denver was a lovely city fifty years ago. A gem in the diadem of mountains. They were not snow-clad in August, but some of the peaks still glittered. A system of flushing from an exuberant water supply ran in the gutters and kept the streets pristine. No smog blanketed the skies and the parks were a lovely uncluttered green. My first introduction to this part of Colorado had been nine years earlier, 1922, but that story has already been told. At that time, all of the roads had been of gravel with only patches of concrete. The transcontinental Lincoln Highway was a highway of good gravel most of the way and it still was in 1931 where road crews maintained it.

3 September: Odometer reading 26225, miles for the day 260. Expenses: 4 gallons 72¢, 4 1/2 gallons 86¢, 2 gallons 38¢. Never-leak for radiator 25¢, radiator repair 50¢, supper 45¢, room at tourist cabin 75¢.

Sorry that Rolly could not accompany me. I said my goodbyes to him and the family and left by 0830. The mountains were beautiful and green, evergreens, birch and aspen blanketed their sides.

The roads were better than they had been, but the radiator was shaking loose and leaked from several unseen holes now cleared of debris by all of the shaking of past days. I bought a tube of "Never-leak" and squirted it into the radiator and it helped for a short time. But soon water squirted at each bump. At a gas station, the attendant attempted to solder a few of the holes, which cost me 50 cents.

There hadn't been many hitch-hikers along the roads, but I picked up a lad my age from Wyoming; fellow by the name of Kingsbury who was headed for San Diego. He kept me company while we both enjoyed the mountains and struggled with the car. We went into the mountains west of Walsenburg and crossed the Los Veta pass in the afternoon. This took us into Wolf Creek

Valley and across Wolf Creek Pass to the top of the continental divide. Then we dropped down to Alamosa by 2130. There we found a tourist cabin and shared it for 75¢. Meals were getting higher too and a good supper cost us 45¢ apiece. The price of gasoline was also climbing, ten and a half gallons had cost me \$1.90, 18¢ a gallon. This was a 40% increase over what I was used to paying.

4 September: Odometer reading 26485, miles for the day 306. Expenses: 6 gallons \$1.26, 4 gallons \$1.00, 5 1/2 gallons \$1.30, 9 gallons \$2.70.

We left Alamosa at 0600 and the leaking radiator steadily worsened until we stopped at Pagosa Springs. There a mechanic soldered the more obvious holes, for another 50¢. Gasoline was now exorbitant; 24.5 gallons having cost \$6.26, 25.5¢ a gallon.

There were farmlands between Durango and Cortes which we reached by supper time. After supper I left Kingsbury on the roadside with my good wishes for a safe trip to Los Angeles and at 1800 I began the 75 miles on to Monticello, Utah. Most of this drive was in darkness. The road was good gravel, no traffic, and I sped along with youthful abandon behind dubious headlights and later wrote in my notes, "I had a swell time sliding around corners".

It was pitch dark in Monticello and I couldn't find a camp grounds, but thought that I had located a little park where I stopped along a dirt road at the edge of which I set up the cot and blankets, stripped off my clothes and slept the sleep of an exhausted road hound. Dawn was breaking when I heard voices and looked around to learn with consternation that I had parked in someone's backyard near the toilet. I hastily dressed beneath the blanket, threw my things into the car and departed for Blanding.

5 September: Odometer 26791, miles for the day 91.

It was Saturday and it seemed to me that I no more than left the city limits of Blanding than that I dropped into precipitous and hazardous roads. In the distance, I could see the Bear's Ears, two blunt peaks of granite, between which was a pass into the spectacular badlands that is scenic Utah. The car and I struggled up to the pass, greeted the Bear's Ears and then down, up and down into the canyon country. Gradually the car disintegrated. The headlights fell off, the doors fell off, the bumpers worked loose, the radiator broke entirely away, held only by the two rubber hoses. The battery housing gave away so that only the terminal cables kept it in the car. I tied and wired and patched as best I could. The nearest town to the monument was Blanding, home of the monument ranger and including only a few stores and a garage.

The car and I steamed into Bridges National Monument and parked by the ranger's tent at 1400. There were no other structures. This tent with its registration book on the lip of entwined canyons as far as you could see; one natural bridge, Edwin, before you and also a map telling you how to reach other canyons and bridges. No other visitor shared my joy at the solitude and panorama. I signed the register and noted by the map that the distances between the three bridges were such that I might not be able to see them all.

Taking my camera and a flashlight, I plunged into the canyon toward the next bridge, Caroline, in the apex of the three, the third August (now

glamorized with Owachoma, Kachina and Sipapu). The climbs were difficult and at this altitude, I was panting by the time I reached a dry waterfall that blocked my way requiring that I detour around and above it. It was growing dark as I reached Caroline and realized that I could go no further. As I retreated, darkness overtook me before I reached the dry waterfall. I used the torch sparingly as the batteries were not fresh, depending upon the failing light and on my night vision as much as I could. In those unpolluted times much light flowed from the stars in the desert sky. I shined the torch ahead at about where I thought the falls should be and the beam disappeared into nothingness. I was standing on the brink! This required a retreat, a climb up to the canyon rim and back down to the floor or along the walls. I was an exhausted explorer at 2430 as I crawled out of the canyon by the ranger's tent and staggered to my cot, already made up before I left. The torch had long since gone dead and I had clung to the canyon wall until a late moon had risen at 2330 to guide me in. It was fun and the canyons worth every moment of the climb!

6 September: Odometer 26882, miles for the day 132.

I slept past sunup and ate a breakfast of dry sandwich washed down by water from an emergency barrel nearby and from it I filled the fragile radiator, my canteen and everything that I could find that would hold water. Reluctantly left this beautiful place and tried to negotiate the precipitous hill immediately above camp. To no avail! Gasoline would not run into the carburetor because the hill was so steep that the tank was lower than the motor. The flow was reversed, so I did the same thing, I backed up the hill. The car climbed better in reverse gear anyway with the rear wheels acting like front wheel drive. Several times during the morning, I had to repeat this hair-raising performance on nearly non-existent roads.

The radiator finally broke up and water ran out as quickly as I poured it in. I even tried urine, a violent odor in the hot motor! Creeping along the mountain roads among scraggly forest, steaming, chugging, barely able to keep the overheated motor in action, afraid that at any moment it would melt or warp the pistons. The last long climb up to Blanding was the most discouraging. All water was gone and the motor was fuming, but we reached the village square.

It was Sunday morning. No stores were open, but someone on the street told me where the garage mechanic lived and I sought him. Together we dismantled the radiator and he welded all of the leaking joints and cracks that he could find. The rest of the damage to the Chevy was more or less hopeless. While we were repairing the car, the Monument Ranger stopped by and he was aghast that I had spent the night on the rim of the canyon. Said, "I wouldn't do that! There are mountain lions out there!" I wasn't impressed.

A bite of lunch when the cafe opened, the car repacked, and I was on my way. The page from my diary for this day was rather brief. "Fought my way out of the valley to Blanding. Feedline clogged at the bottom of a hill and spent an hour or so cleaning it. Radiator cracked and motor nearly burnt up just outside of Blanding. Spent an hour soldering it, cost \$1.00. Ate supper at Monticello, 50¢. Headed for Cortez and raced in between a wedge of storms. Just outside of Cortez blew a tire. Got into a cabin ten minutes before the

storm broke. Roads between Monticello and Cortez good when dry, impassable when wet. I speeded all day and slid around corners, into bridges, over bumps and in general kept my heart in my mouth."

7 September: Odometer reading 27014, miles for the day 76. Expenses: 7 gallons \$1.82, now 26¢ a gallon. Entrance to Mesa Verde National Park \$1.00, lunch \$1.25, supper 45¢, car repair 50¢.

I left Cortez at 0730 and arrived at Mesa Verde National Park at 0900 where I registered and paid the one dollar entry fee. Driving on up to the Mesa headquarters, I met John Bookwalter with whom I had graduated from Danville High in 1928. He was one of the ranger guides. We took one of the shorter excursion trips in the morning and John rode with me as the old Chevrolet led a procession of big cars. We met a young lady tourist and her mother, Mrs. and Theresa Kirby, had lunch with them, and again led the afternoon longer tour. By the time we had returned to headquarters, a front spring shackle had broken and the local blacksmith, employed to keep park vehicles in condition, welded it for 50 cents. During the day we had seen some of the marvelous cliff dwellings; Temple of the Sun, Cliff Palace, Balcony House and others. In order to keep my schedule, I left the Park after the repair and arrived in Mancos, Colorado, in time for supper, later found a place to camp out.

This had been a fun day! Riding in my wrecked Chevy at the head of a caravan of ten to fifteen cars appealed to my sense of humor. John, acting as guide, explained the history and use of the cliff ruins to the tourists and we both enjoyed escorting Theresa among them. The roads in the park were good, the ruins undamaged by an over-loving public and the accommodations were meager by comparison with today's development.

8 September: Odometer 27090, miles for the day 220. Expenses: 6 gallons \$1.97, 5 gallons \$1.08, breakfast 35¢, lunch 35¢.

I had slept behind an auto camp and was awakened by the morning sun. Left Mancos early and bought gas and breakfast in Durango; gas and lunch at Montrose. Climbed through two passes during the day, Cascade Divide and Red Mountain Pass, both of which were beautiful, with good roads. The road began to deteriorate east of Montrose and was soon intolerable all the way to Gunnison. It was a tooth breaking gravel corduroy which shook both car and driver to pieces. It was 1900 before I reached Gunnison where I found an auto camp, cleaned spark plugs, repaired a tire and went to sleep under the trees.

9 September: Odometer 27310, miles for the day 200. Expenses: 4 gallons 96¢, 6 1/2 gallons \$1.27, dinner 40¢.

Awakened by the sun and a howling dog, I broke camp and went to town for breakfast. About half a dozen of us in the cafe, all young men, began berating the country and its roads, which nearly resulted in a fight with the restaurant owner. Drove the long steep climb to Monarch Pass at 11000 feet and then bumped on to Salida. The road all the way into Canyon City was the worst that I had experienced yet. It blew out two tires for me! Just miles and miles of corduroy over which you had to creep. Arrived at Salida at noon and after a good 40 cent meal I drove on down the canyon to the Royal Gorge. From Canyon City to Pueblo the road was good and wherever I stopped I tried

to beg, buy or steal a set of deer antlers, but had no luck.

10 September Odometer 27510, miles for the day 130.

We left Pueblo at 0600 and arrived at Denver by 1010 and this was the last day of adventurous travel. Visited with the Gillettes and drove around Denver some.

11 September. Odometer 27640, miles for the day 120. Expenses: 5 1/2 gallons \$1.05.

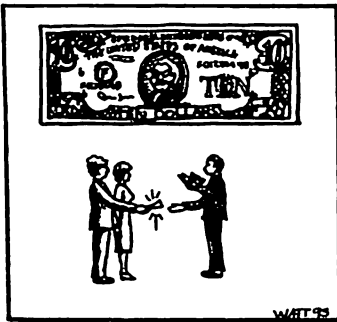
Since this was Friday and Rolly had to work, and Reverend Gillette was free, he suggested that we drive up Mt. Evans to the Echo Lake area. By now it was impossible to shift gears without using both hands in order to grind the worn-out stubs together. I forget which automobile company of the era was advertising the ease of shifting as "syncro-mesh", but at each clashing, grinding shift, the reverend would laugh and cry "synchro-mesh!" We had a wonderful day hauling the wreck thousands of feet up the mountain and mothering it back to Denver.

And that was the bitter end! The next morning we took it to a second-hand dealer for sale. He looked it over with misgivings and as I had bought a new battery before leaving Urbana and it was still useable, offered me \$6.00 for the whole.

The next day Rolly, two of his friends and I began a non-stop drive in his car which was also a Chevrolet. We alternated drivers and slept as we traveled, the non-stop was interrupted by a shattered wheel bearing at dawn just outside of Oberlin, Kansas, the same town where a broken wheel bearing had stopped our Dodge in 1923. An early morning repair and we reached Urbana by Tuesday night, a day later.

In its last fortnight, my valiant aging Chevrolet had traveled 2472 miles of rugged and tortuous roads and died an ignominious death in Denver for \$6.00.

8. *Matrimony*



Sometime during my childhood, Mom took out a kind of saving or insurance policy that was supposed to help my college career, if any. She paid 15 cents a week to this agency and continued it faithfully for the entire length of its activity. Soon after my 21st birthday, I was elated to receive a check from the agency for \$300.00. This was a rare piece of wealth which I immediately deposited in a savings account in the University Bank of Urbana and within six weeks

the bank closed. Ten years later, I had received a repayment of \$29.50. So much for frugality!

Graduation came in June of 1933, with High Honors, Phi Beta Kappa and no prospect of employment, but I could continue with Mr. Flint and work towards a Master's degree. One Sunday afternoon at Wesley Foundation I intercepted Lucy Esther Lou Fairchild. She had come to Illinois after three years at Purdue University, Indiana, and completed her studies at U of I, receiving her Bachelor of Science in Education in October 1932. She was now working on a Master's degree in History here at Illinois. We began dating and I guess were both in a marrying mood, for by the time the summer was over we were engaged.

And with the benign fantasy of youth, I quit my job with Flint and we were married in Decatur on 1 October 1933, by the same Presbyterian minister who had christened her 23 years earlier. It was an edgy ceremony attended by Mom and K, Dad and Evelyn and relatives of Lucy who considered divorce with a jaundiced eye. The morning ceremony was performed in the minister's home followed by guests, bride and groom attending a chicken dinner at a local restaurant. Marjorie, Aunt Gertie and Uncle John had been delayed by train and missed the ceremony. They arrived later in the day and we went through another bridal dinner of roast chicken. With dubious blessings from friends and relatives, we drove east to Turkey Run State Park for the honeymoon. I had wanted to take Lucy to Yellowstone for our honeymoon, but that was a financial impossibility. It remained a dream for fifty years until 1985 when we finally went to Yellowstone on our honeymoon, and you know, it was even more fun.

Lucy's lawyer had given her money for the wedding and honeymoon. She gave the minister \$10 which he gave to his wife and she gave it back to Lucy. Driving the Star, which I called my town car, we arrived at Turkey Run in the night and registered for a room at the Inn. By the next morning, she had a fever and developed tonsillitis. Breakfast came with the price of the room so she ate it each morning and slept off her ailment for the few days that we remained there, while I spent each day collecting insects and enjoying the beautiful oak-hickory-maple forest that is still the heritage of this lovely Park. Years before Rolly and I had explored the park, Shelford had taken us there for a weekend study, and as long as Lucy and I remained in Illinois it was one

of our favorite places to go.

Lucy was a Fairchild, a large clan of farmers who owned and operated much land north of Danville. Her father, F.M. Fairchild, had sired 19 children and she was the 19th, born when he was 62 to his second wife who was 45. She had delivered several stillborn, but Lucy was healthy and squalling. So sure was the family that she would not make it they didn't have swaddling clothes for her. She became the apple of her father's eye and loved him above all others. There were still six of the family from Ann, his first wife, who had died of tuberculosis, and these brothers and sisters were adults whose children, though her nieces and nephews, were her same age. The time span of the family was such that her father's brothers, her uncles, had served in the Civil War.

At the time that her father retired to a beautiful townhouse on North Vermilion, he was operating a cattle farm of a thousand acres, producing grain to feed his stock. It was a show place among the Fairchild farms of the area. On it stood the original homestead built in 1814, a two-story house of handmade red bricks, his birthplace, to be vandalized, burned and destroyed in 1989. He was known as Milton, tall, iron gray hair, rugged and individualistic, a force in the farming community and church. He died when Lucy was 16 and left her with a legacy with which to complete a college career, and she and her mother lived in the townhouse. The estate was placed in the hands of the First National Bank and Mrs. Fairchild, in deep bereavement, suffered pernicious anemia and made no effort to control the actions of the bank officials or the fate of the estate. And the depression took its toll!

Returning from school in Indiana, Lucy found her mother broke, the farm in debt and creditors pressing. She was now of age and went to Lawyer R. D. Acton, and his brother who were willing to take on the battle of breaking the bank's hold and settling the estate on its heirs, "Only if Lucy was willing to stand the strain and to accept the results."

R. D.'s son, also Robert D., who had been in grade school when this all began, also went into law and he took over when his father retired. With the Actons to protect us through the years, we have all benefitted, and I recognize that our freedom to pursue my life interests has rested on this.

R. D. broke the trust, settled with the heirs and used the townhouse to cover indebtedness. Lucy inherited almost half of the land remaining, hers and her mother who died two years after we were married. The remainder including the main house was divided between half-sisters, Maude Crawford and Daisy Fairchild and later went to her nephew Ralph and niece Phyllis Crawford. F. M., in financing his sons in earlier enterprises, had considered these ventures as their inheritances so it was the Crawfords that benefitted. We now had unencumbered land and no place to live. Lucy's mother moved in with us in a small apartment that we had found on Chandler Street and half-brother, Galen, was running the farm. The Fairchilds had good credit rating and her mother's old housekeeper, Mrs. Wintermantle, also helped us. We paid her in groceries that we charged. I had no job, bought gasoline on credit, managed to

scrape together money enough for the rent, and we had to borrow to keep the farm running, not so much but that we could clear it up a few years later. We owed the grocer, the department store, gas station, doctor, druggist, and the lawyer, but he staked us occasionally as he had done before.

It was 1933, the year of the World's Fair in Chicago, the Century of Progress, and it was the year that the chinch bugs ate our oats and corn. These insects were destroying oat, wheat and corn crops all over Illinois. It was an era of clean fence row farming and everywhere farmers had burned or stripped fence rows, plowing with blades actually under the fences. This destroyed one of the important over-wintering places of the Chinch Bug and all of its predators and parasites as well. The population exploded! Chinch Bugs covered the soil, walking or flying from row to row of corn or oats. The nymphs are red and the contemporary story was about the farmer who tried burning his field to kill them and said afterwards that it didn't work for he saw them walking from the field red hot. Ditches were dug about infested fields and as they filled with bugs, kerosene or waste oil was poured over them, but the hordes continued.

In recognition of the economic shock to farmers, Fair officials publicized that the entrance fee to the Fair could be paid with a pint of Chinch Bugs. It took me only a few minutes to fill several pint jars with them, we boarded the Star and went to see the Fair. It was so spectacular that we drove to Chicago again in 1934 to enjoy its closing day celebration.

We were low in funds as Christmas approached! Some left over Christmas cards from former Christmases were discovered in a drawer along with a few unused 3 cent stamps. As an unsealed envelope could be mailed for 1.5 cents, we took our cash, 27 cents, and the unused stamps and traded for 1.5 cent stamps and happily mailed the cards to friends and family.

None of my job applications resulted in offers and we had no urgent business in Danville for R. D. was plodding away with land surveys and abstracts as he ferreted her father's and the Bank's land transactions. We hoped for employment afield and as caves fascinated me, we thought to drive to the Mammoth Cave region of Kentucky for work. There we found a sympathetic dentist who owned three caves, Mammoth Onyx, Floyd Collins Crystal Cave, and Hidden River Cave which flowed beneath the town of Horse Cave. He permitted us to pitch our tent in the massive collapse that was the entrance to Hidden River, hired me to distribute leaflets to motorists on a nearby highway, and Lucy as a guide in the cave, and permitted us to use the bathtub in their home by the cave entrance. His wife fed Lucy coffee, snacks, and lunch and between the two of us we earned ten dollars a week.

Horse cave was a Saturday Night town! The leading lawyer was a drunk, the only doctor also owned the drug store and his fees were cheap, two dollars, but he charged heavily for the prescriptions he filled in the store. I remember paying him four dollars for some medicine. Saturday afternoon local farmers, townsmen, and others gathered to sit in front of the stores along Main Street,

under the wooden awnings protecting a board or cement walk, where they got out their chewing tobacco, whittling sticks and knives and chatted while they whittled. They sat, chatted, chewed, and whittled for hours, sometimes involved in arguments that became knife wielding. Driving home from the main highway one Saturday afternoon, I picked up an old hitchhiker and as he disembarked at town center he left a bedbug crawling across the front seat.

In a few days we rented a room in the lawyer's apartment building and listened to his weekly drunken ranting and tirade against the city council. I am not a good salesman! When tourists stopped to talk to me and said that they had come to see Mammoth Cave, I agreed with them. It was confusing to find that there was Mammoth, New Entrance to Mammoth, Mammoth Onyx and others, all of which are now incorporated in Mammoth Cave National Park to protect this immense network of caves and underground river channels draining into the Green River. The Park was only under discussion then and the subject of heated arguments by land and cave owners. One of these rivers that drain the area ran beneath Horse Cave in a channel passing through great rooms and the third of those which we showed covered three acres. The limestone between its roof and city above was thin enough that when it filled with water the water seeped to the surface and formed a pool; and when showing the cave to visitors we could feel the vibrations of passing trains.

A family of six pulled up before me in an old car and wanted to know about the caves. They had funds for only one cave and it should be Mammoth. I assured them that a ticket to ours gave them the opportunity to see three beautiful caves and that I would guide them in Hidden River. Unbeknownst to me, rain up country had filled Hidden River to the roof with surging muddy water. When we started down the stairs into the cave and were confronted by this, the man asked me, "What's wrong with the other caves too?" I so lost face that in a few days we returned to Illinois.

There was an aspect of entomology that was just being explored and I had become aware of it during Shelford's field trips, the aerial activity of insects, aeroplankton. An entomologist in France had attached small nets to the wings of a biplane and found insects flying or floating at thousands of feet. I wondered about the source and density of this population closer to the soil and attached a ten-inch net about a yard long to the right front fender of the Star. Each morning at sunup and evening at sundown during May and June, I drove slowly along a four-mile route through the countryside near Horse Cave. At Danville I continued this study along a route across Lake Vermilion and into the hills beyond. A year of these trips resulted in collecting thousands of

[1932: Incubation of bark bug eggs (*Hemiptera: Aradidae*) Ent. News 43. 1933: The effectiveness of the sting of *Aenoplex carpocapsae* Cushman (*Hymen: Ichneumonidae*) Ent. News. The click beetle's click (*Coleop.: Elateridae*) Ent. News 44. Unusual variation in the life cycle of the male of *Aenoplex carpocapsae* Cush, codling moth parasite. Ann. Ent. Soc. Am. 26. 1935: The bite of *Melanolestes picipes*, Herrick-Schaeffer (*Hemip.: Reduviidae*) Ent. News 46. A soil surface sampler, Ecology 16.]

insects and the work was summarized as my Master of Science dissertation, and

in several papers.

We found a small one-room apartment above a store and made reacquaintance with Wes Gillum, also a high school friend, and his beautiful fiancée, Mid. He was working for Fagan, owner of a car wrecking and parts emporium. Wes knew every part in every make and model, drove an old Cadillac Coupe, and built racing cars. He was fearless on the road, and reckless in our eyes, but thrilling to ride with.

Mid was a beautiful brunette who was "broad were a broad should be broad" (first hand information as we played strip poker) and she was a coal miner's daughter. Wes knew more about cars and the young lady that he did about coal mining. Her brothers had what were known as "dog holes" in that part of Illinois, small mine shafts into beds of bituminous coal and Wes went out to help with the work from time to time.

On this occasion, they were preparing to blast and he helped drill the holes and set the dynamite. From each charge, a lead of several feet of fuse was laid out into the tunnel. This was black powder fuse which burned at a rate of about a foot a minute or less, only Wes didn't know about either fuses or dynamite and the brothers were aware of this. When the charges were in place and the fuses laid, the brother in charge said, "OK, Wes, give us a couple of minutes to get out and then you light them and follow us!"

Unwilling to express his nervousness, Wes grunted an "OK" and watched their headlamps recede into the darkness. Now alone with the dynamite, his sputtering carbide headlamp, and the fuses, he looked at them. They seemed to shorten as he watched. A distant hail told him that the others were now outside. It was customary to lift off your headlamp and light each fuse with it, which he did with nervous fingers. As each fuse hissed into life, he jumped back and as the last one burst into flame, the lamp slipped from his fingers and went out as it fell. Immersed in total darkness with only the sparks of the hissing fuses before him, Wes was in near panic. He groped for his lantern, found it, spun the flint lighter, but it would not ignite. You can't, don't dare, run in a mine or a cave. With shaking hands he tried several times before the carbide gas ignited, while before him the fuses burned on menacingly. His lantern caught, he slammed it on his head, and dashed out of the tunnel where the rest of the crew gave his ashen, sweat smeared-face one look and burst into laughter. They had all suffered that same moment in times past! Wes stood there sheepishly for the seven or eight minutes enduring their ribbing before the muffled roar, puff of air, and dust told them that the charges had gone off.

The Roosevelt era had begun and money became available for public works, WPA. I convinced the city manager that I should make a study of the trees in Danville so that the landscape planning department could know what species were present and the trees' conditions. He set up a three months program for August, September, and October with an \$85 monthly salary and in those three months I examined all 18,000 trees in the city, identified them, looked for insect infestations and disease, located termite centers, and prepared a comprehensive report, maps of tree locations, and all. Danville was a Republican town and the Roosevelt era was Democratic. Fall elections threw out the Republicans, my report went into a circular file and I back on the

streets.

Another public program was underway. Community Centers as a source of entertainment and education for everybody, but especially for the unemployed and their families. Five such centers had been set up and I volunteered to present weekly nature study programs at each, at a fee that I no longer remember. At the same time, Lucy and I opened a little fast food restaurant in east Danville near a factory, Lucy doing the cooking and she and I living in a room in the back. Hamburger 5 cents, milk 5 cents a glass, and other sandwiches of equal value. Workers at the factory hesitated to pay so much and the food shop failed, but the Community Center nature classes did not. In a pawnshop I found an old opaque slide projector which would project pictures glued to 4 x 6 inch cards, and for months I mounted nature subject pictures from every source that I could find. Old National Geographics were available for 10 cents or less at book stores and by careful use of a scalpel I could divided the heavy glazed sheets so that they could be pulled in half thereby saving the pictures on both sides. Thousands of cards illustrating birds, mammals, insects, flowers, etc. were accumulated, a collection that still exists in my cabinets. From these I prepared lectures on topics given at each Center one evening each week. I was gratified that they became quite popular, both adults and children enjoying the pictures.

"When no job appears, return to school and get another degree", Dr Metcalf had said and had offered me a graduate fellowship in the department, but Flint would not have me back. Fall 1935 found me enrolled again at Illinois, Lucy and I in an apartment that cost us \$33 a month (my fellowship paid \$30 so were back on credit and farm money again) and the winter was so cold in January that a fish bowl on the dining room table froze, killing the fish! The landlord let us move to a smaller but warmer second floor apartment for \$25.

The aeroplankton study made an adequate Master's Thesis and in the final oral exam before the degree was granted, I learned a lesson in preparedness that I hoped would stand me in good stead when I stood before a committee and my Ph.D. preliminary examination. Dr. Metcalf, chairman, overlooked some of my glaring errors, but did wonder aloud how I had forgotten things the committee thought that I should have known.

A group of graduates and assistants were grading papers for one of Dr. Hayes' classes. He was a man of strong convictions, self-importance and humor, and preferred to direct his barbs at others, but did not like them directed at him. My lack of diplomacy has often placed me in jeopardy and during the bantering that went around the room I realized my mistake, and as I walked across the campus, tears in my eyes, my graduate fellowship was discontinued.

[1936: An odd hibernaculum, Psyche 43. A city's trees, Torreya 36. Psocid habits, Entomological News 47. 1937: Barren-land bugs, The Beaver. Insect remains, Ent. News 48. Some field equipment, Ent. News 48. 1938: Where to collect insects? Ent. News 49.]

9. Churchill



We were now driving a Model A Ford. K's 1921 Dodge has already appeared here and my Ford Truck of high school fame, and the ill-starred 1921 Chevrolet touring car that died in Denver. Upon my return from the west, I again felt the need for transportation, but there were restrictions on driving and Mr. Flint had cars available for field work. Some politician had supplied State officials with sport model El Cars.

This was a high-speed gas hog and one which he detested had been assigned to him. It was useless as a field vehicle, but we all wanted to drive it in splendor. I was given a more practical vehicle to conduct a Hessian Fly survey in several nearby counties. The Hessian Fly is a small immigrant the larvae of which attack young wheat plants stunting their growth and reducing a field's yield. As winter approaches, larvae of the latest generation pupate amid the leaf covers at the bases of infected plants. There the fly waits for spring to release it. Samples from fields determine the magnitude of the infestation and agriculture field men made such surveys each year. But I still needed a car!

Early in 1933 I had bought a 1927 Star, 4 cylinders, upright 4-door sedan, get-in, walk-back, and-sit-down, my "Family" car I called it. It was my courtin' car! One evening Lucy and I were out for a drive and I leaned over to kiss her, driving into a telegraph pole in the process, resulting only in a bent axle, easily repaired. After we were married, it was the work horse taking us to Chicago twice, to Kentucky and other odd jobs around the midwest. It finally died on a railroad track in 1934 and after we pushed it off the track, it was down payment on another model. I had the front seat cut down so that it could fold back to make a bed and had put a large box for a trunk on the back of it. The objective was camping, but Lucy did not like camping in it, especially after we got caught out in a heavy electrical storm on Meson Creek where I had been fossil hunting. We sought a hotel in a nearby town at two A.M., selecting a key from the registration desk which was unoccupied and hardly asleep before milk cans were rolled and banged in a dairy below our window; and they charged us five dollars. The ill-famed criminal, John Dillinger, had escaped from prison recently and we were stopped by patrolmen and made to open the box in the rear (filled with camping gear) as they thought we might have him hiding in it!! However, the Star was the most economical car that I have ever driven; more than 20,000 mile in two years at a cost of 1.5 cents per mile including the initial \$85 that I paid for it.

In 1935 we went through a couple of cars with alacrity! The Star went as a down payment of \$25 on a straight-8 Marmon which didn't cost much more than that. What a deluxe behemoth that was! It got less than ten miles per gallon and even with gasoline at five gallons for a dollar, it was expensive to drive. It survived only a few weeks before we were stranded in the countryside as the copper tubing pushrods which operated the valves curled up like

dandelion stems and brought us to a shuddering halt. Towed back to Danville, the dealer traded it even for a Whippet roadster. I do not remember the year or the company producing either of these cars.

The Whippet was a fun car! It had a rumble seat in which our black-and-white collie-mixed mutt rode and from which she fell out once and was gone for several miles before we noticed her absence. Back at the curve where she had fallen, she was waiting mournfully by the roadside. She was named Vi, from Viola Philo, a singer of that era, when she raised her voice to howl in loneliness or discomfort.

The Whippet had a disconcerting habit of coughing through the carburetor when starting, thereby igniting the gasoline which spilled out. You could see this merry little fire through holes in the floor board and I would jump out, throw up the hood, and blow the flames out. Most of our friends and relatives who had the temerity to ride with us considered this a harrowing experience, but it was routine for us.

We were returning from Urbana one afternoon when a connecting rod broke, throwing the piston through the top of the motor. It was scrap metal now! I had a tow rope and passing motorist in a Buick was kind enough to hook on to us. The Whippet was so light and the driver so intent on conversation with his companion that he forgot that he had us tied on behind. Gradually his speed increased and our speedometer, which was working, climbed steadily higher. We were traveling at seventy miles an hour, a record for the Whippet. The wheels vibrated, the frame shuddered, I clung to the steering wheel to keep the car level on the pavement and Lucy clung to the doors to keep them from falling off. A cat ran in front of the Buick and the driver braked suddenly and although my reaction was fast, it was not fast enough and my brakes not good enough to prevent the Whippet from overtaking the Buick. The tow rope wrapped around a wheel as the driver accelerated again, snapping the rope and sending us skidding across the road. He apologized, saying that he had forgotten about us and took it easier on into Danville where the dealer gave us \$10 for the Whippet as down payment on a Model-A Ford.

This was what I was driving when we moved to Peru-LaSalle in Northern Illinois to work with the Illinois Tree Service Company. Somewhere along the way, I had met Vergil Gower who lived in LaSalle, was an ex-Davey Tree Expert, and who had established his own tree care company. He wanted me to help as field salesman and foreman. Lucy and I packed the Ford and went to Peru to find a room above the railroad yards, and later in a private home. we cared for trees at fine homes in Peoria and foremanned a WPA tree project in a park in Peru, and tried our hand at sales in other cities. Business was poor and so was the company, but we stayed alive.

Hiram Walker Brewery at Peoria was on fire! The millions of gallons of raw whiskey burned great belching flame for days and the tower of black smoke was visible for miles. Local drunks slaked their thirst where whiskey poured from drains into a nearby stream. Lucy and I drove to see this great fire. Crowds had gathered along the retaining fences about the brewery grounds, vendors were selling ice cream, candy and trinkets and among them was an elderly man selling puppies. He had two tiny black-and-white miniature short-

haired terriers of uncertain breed and holding them in his arms, he would strike them together to attract attention as they growled and snapped at each other. He wanted two dollars for each, which was the sum total of our resources between us. We walked away! But they were going to die of exhaustion if we didn't do something about it!! We returned and bought one, which appeared near death. Laying it on the back seat of the car, we drove away saying that only the McClures would spend their last cent for a dying puppy. She did not move until we arrived back in Peru, and then came alert and hungry and so Tuppy (short for Tuppence) entered our lives.

As related earlier, William Beebe came to the campus to lecture while I was working on my Master's and once more I approached him to ask for a chance to be with him in his field studies. And his answer was, "No money! Do it yourself and gain experience and then you might be recognized as capable!"

I was continuing to take Shelford's field courses and discussed with Arthur Twomey projects that we might undertake with little funding. He was a native of Saskatoon, Saskatchewan and was being considered as a staff member in ornithology at Carnegie Museum in Pittsburgh. He had worked with Taverner, the famous ornithologist of Canada, and wanted to make another birding trip to Churchill, Manitoba. Possibly I could go along and make an insect survey while he collected specimens for Carnegie. We made out plans and I wrote to Uncle John in Washington asking for a loan of \$350.

School closed, Lucy went to Decatur to be with Mom and K, and Twomey and I packed his car. The expedition was under way and on the first of June of 1936, we drove north into Canada and somewhere north of Winnipeg, camped for the night in the open tundra-like country, pitching our only mosquito-bar near the roadside. We had sleeping bags and squeezed under this meager protection from the hordes of mosquitoes for which the northlands are infamous. During the night, I tossed out of the blankets and put my arm against the net. I awakened in the eerie dawn with so many mosquitoes sampling my blood that the net swayed inward as I pulled my arm free, snapping the hungry insects away from their imbedded stilettos.

We left the car and boarded the Hudson Bay Railway at the rustic town of The Pas, a slow, hard-seated, swaying train, heated by a coal or wood burning stove at one end of each car. It thundered northeast at maximum speeds of less than 25 miles per hour along the mucky valley of the Nelson River to turn north at Gillum, a village of log cabins, arriving at Churchill on the Churchill River 24 hours later. As darkness had approached trappers, explorers and tourists lowered the springless and cushionless bunks, threw their sleeping bags onto them, and retired. This weekly train was to arrive at Churchill around nine o'clock in the morning each Saturday where it sat on a siding until Sunday morning allowing the traders to exchange their furs and lies and the occasional tourist a day of sightseeing. On this particular trip, amber hunters had off-loaded at Gillum to move on to the mouth of Nelson River in search of the amber beds there. As there was much to see at Churchill, the

hardy tourist could stay until the next train a week later while the timid could return the following day.

In mid-June, soon after coastal ice flows began to break up, eskimos from far north Chesterfield Inlet and other points of the compass began to arrive for summer trading and to see the sights of the city. Churchill's population was about 500 in the summer and 50 in the winter, but this was big city to them. They also exposed themselves to white man's colds as well. The occupants of the train from The Pas invariably would leave a legacy of runny noses and wheezes during the summer. The eskimos enjoyed seeing the vast granaries of Churchill and drinking tea at the free trader's shops. Free Traders were those not associated with the Hudson Bay Co. The Trader who was feeding us would line the eskimos up on the floor along a wall and ply them with tin cups of strong tea laced with sugar. They loved it and sold furs and handicraft to her.

With those that we met was a young man on his first trip to Churchill. He marveled at the buildings and docks and grain bins, but most of all he marveled at the horses. There were only two or three horses present at the time and they were tethered out on a point where north winds kept them relatively free of mosquitoes. I was finding the vicious arctic mosquito population so abundant that in willow thickets they numbered nearly a thousand per square meter of foliage and they could kill horses if the animals could not get relief from the biting hordes. Even the well-furred husky dogs had to dig burrows in the sphagnum for protection. The young eskimo wanted to ride on the wagon behind the team used for light hauling. He sat transfixed on the spring seat beside the driver who upon inspiration handed the reins to him. Feeling the touch of a strange hand, the horses started off at a good clip. Terrified but undaunted, the young man called to them a command that sounded like "whoa" and the team stopped. Rolling with laughter, he climbed down off the wagon and his friends wanted to know what was so funny. They told the driver, "He is laughing because such a big animal responded to the same command as a small dog!"

Stories of the northland are endless as are those of the tropics; polar bears in the north and tigers in the south. The local train disgorged tenderfoot tourists already mesmerized by the hard bunks and coal burning stoves of the "deluxe" pullmans. A few looks at the expanse of tundra, melting ice, calling birds, and delicate flowers, and attacked by mosquitoes, no-see-ums, and deer flies, and they quickly repaired to the free traders. There they were regaled by tall tales from the ever present trappers. Often these tales were fearsome; polar bears climbing aboard small fishing vessels, wild husky dogs attacking menstruating women, motors failing in rough seas, monstrous blizzards, so that by the next day the timorous had enough and returned to civilization with their own stories of their experiences in the arctic.

I can't remember that there was a hotel then. We had rented a railroad bunkcar on a siding, but some of the traders had rooms for rent. Even so, their accommodations were worthy of a letter home, but the food was excellent. I had been milk-fed all my life, but here I learned the art of British tea (of the texture and color of Boh-Tea of Malaya). We stayed all summer and as Twomey was an old hand, I received the treatment with the entire repertoire

of stories. If you can find it in the library, read Twomey's "Needle to the North". It is a good yarn, too.

Since I do not like the cold, it was stories about the cold that impressed me. When the wind blows frozen snow, the blizzard can be so dense that you cannot see the length of a lariat, but go up to the second or third floor of a building and there will be bright sunshine, for the mass of moving snow is not very deep. Our trader's young daughter started to school which was only a hundred meters or so away and a wind swept in obscuring the school and her home. She only accidentally found her way back home, not being able to find the school.

Husky and Windy are now long dead, but in 1936 they were well known at Churchill. Twomey had known them for a number of years and had been with them before. Husky was a short, tough-looking little man, called Husky because he was married to an eskimo woman, a Husky in the local vernacular. Windy was a big silent man who was called Windy, both euphemisms from his silence and also he hailed from the Windy Lake vicinity. They were Northwest Territory trappers from Chesterfield Inlet far to the north, and trapped in areas hundreds of miles apart, but got together each year to bring their furs by boat for sale at Churchill. It was a long, narrow boat powered by an outboard motor and having a small cabin amidship. When making the long trip to Churchill and back, the friends, wherever possible, would beach the craft at sundown and Husky would sleep in the tiny cabin while Windy would roll up in his sleeping bag above tideline on the beach.

Such men sleep with their rifles and one night (night at that latitude in summer is just when you get tired enough to go to sleep since the sun never sets) while they were sleeping a large polar bear climbed onto the boat and poked his way into the cabin. Husky awakened to see a great white face armed with yellow canines reaching for him and in instantaneous reflex, grabbed his rifle and fired into the bear's throat. The shot killed the bear which fell upon him pinning him to the deck. The shot also woke Windy who came roaring to Husky's rescue. The bear was so heavy that he could move it in the close quarters only with great difficulty and freed Husky. When they reached Churchill, it took a loading winch to remove the bear to a dock.

This had happened many years before, but such sleeping habits were still with them when Twomey joined them at Churchill one summer. He too slept on the beach. Early one morning, wearing a white sweater, he reached over the gunwale to shake Husky awake. Husky opened his eyes to the white sweater and Twomey was almost too slow to avoid the shot which would have come as he yelled and jumped back.

Two structures guard the delta of the Churchill River jutting into Hudson Bay. The French built Fort Prince of Wales during the mid-1700's of precambrian granite on the north side of the river. They drilled holes into the granite during the short summers and let them fill with water so that the mighty forces of freezing in the deadly winters could shear away the blocks to be used in walls and battlements. Rusty iron rings in the granite above the river once supported the lines to their fragile seagoing crafts more than two centuries in the past, and chiseled into the rocks were Samuel Hearne, Robert

Smith, and the names of others who suffered these times. On the south peninsula of the river was built the Powder Magazine, another impressive ruin. After years of isolation in this rugged climate, the French stored their ammunition in this depot, retreated to the fort, and in 1784 could but surrender to the British warships and hopefully go home. As the warships Discovery and others hauled up before the fort, the French surrendered and blew the fort which in 1936 was being renovated by a historical society.

I worked within a few miles of Churchill, walking distance, while Twomey went further afield, even to Landing Lake, with his friends. There they apprehended a large polar bear, the hide of which they eventually hung to the side of a box car and cleaned. Large granite boulders were strewn about the water-saturated sphagnum of the tundra, any one of which would shelter or hide a polar bear. As the sea and land warms the bears come south to feed on tundra berries and fruits, so I was constantly wary. All that I carried for protection was a butterfly net!

Each day in the field collecting and recording; after supper each night at a desk in the bunk car sorting, bottling, and examining specimens until exhaustion made one look at the clock to find it way past midnight and still bright light. Twomey skinned his day's collection of birds and I examined them for ectoparasites, all part of a comprehensive effort to learn the invertebrate ecology of this area and the interactions and interrelationships among its fauna.

August came and the daily temperatures began receding. Soon it would frost again! Twomey got word to proceed to Pittsburgh and I must return to Illinois, for my money was gone and I had nothing of value to sell to these northern folk. Lemmings were everywhere. I caught several, prepared a screen topped metal bread box as a carrying cage for them, and fed them the plants that I had seen them eating. The poor things scratched at the screen and metal incessantly to escape. The train trip back to The Pas was uneventful as was the long bus trip to the U.S./Canadian border, where we must declare our belongings. The boxes of insect collections drew no comment, but I knew that I could never get the lemmings into the United States, therefore, at the U.S. Station I left the bread box upon my seat, a book on it to hide the screen, and a hope that the inspector would take it for my lunch box and that the lemmings would remain quiet. Each did!

For months I had been trying to interest zoo directors about the land in exhibiting insects. I designed exhibits, wrote project proposals, made plans, but to no avail. Only now fifty years later are zoo directors beginning to realize the potential and tremendous appeal of effective live insect dioramas. By correspondence I knew Robert Bean and his son, Robert Jr., of the Brookfield Zoo in Chicago. As quickly as the bus settled into the Chicago terminal, I checked my luggage, caught a cab, and with my bread box of unhappy lemmings, went to the zoo. The Beans were interested! This was an animal of almost mythological fame which was rarely exhibited in any zoo. They prepared a glass fronted cage cooled by blocks of ice and Chicago zoo goers got to see lemmings for a few weeks while I received \$25 which paid the rest of the way home, arriving with a little in my pocket.

Wild flowers have a lure and a charm all their own. Possibly it is because we work so hard to get a few flowers to grow in our gardens, while the wild ones seem to come up and bloom easily and perpetually. It is expected that there should be numerous and gaudy blossoms in the south, but to the layman, the fact that the tundra is literally alive with flowers is something of a surprise. A garden grows where there is ice and snow nine months of the year.

At Churchill the appearance of flowers during the few warm weeks can be likened to a swiftly moving symphony with numerous variations and played by hundreds of instruments. Because of the short growing season, spring is explosive, summer transient, and fall a mere shadow, so that the two hundred-odd flowering plants of the region must hurry to get their blossoms pollinated and fruit ripened.

Churchill is on the edge of that vast arctic, subarctic, and pole-encircling type of country called tundra. Its nearest relatives are the grass patches on mountain tops, the alpine meadows. Siberia has it, Alaska has it, and Northern Europe has it, but nowhere is the tundra as easily accessible as it is in Canada. It is because of Hudson's Bay that the tundra extends so far south into Canada, for its waters are always cold and full of ice and the north wind, with a head start in Greenland and Baffinland, sweeps across the bay and chills its shores.

The tundra, otherwise barren lands or muskeg, is something like a cross between a wet sponge and a rock garden. The last glaciers were very careless about where they dropped their rocks, and, except for the top few inches, the ground is eternally frozen. On this mixture of ice, gravel, and sphagnum grows a layer of lichens, mosses, and numerous flowering plants which in dying do not decay, but have piled up on the substrata to a depth of many feet. As the ice and snow thaws in the summer, this sphagnum, which is not unlike peat moss, becomes water-soaked and spongy, so that the only suitable footwear is waterproof or rubber hobnail boots.

The rocks are encrusted with lichens in black, green, gray, gold, and rust red which looks soft and velvety, though you would dull your knife trying to break off a piece. On the sphagnum the lichens or reindeer mosses are of two shades, a grayish to gray-green and a black or brown. No one plant seems to ever start or end, and the branches remind one of an oak tree seen in the wintertime through a reversed binoculars.

Because of the cold blasts of air, nothing grows tall. Willow and birch trees struggle up to waist height and spruce trees lie on the ground. They occasionally send up a leader which grows to six or seven feet in forty years and because of the north wind has no branches on the north. Everything is dwarf, and after climbing over the tundra and looking at the plants, I began to believe that Lilliput was not such a fantasy after all.

We arrived on Churchill on June 9 and there were still large snow banks and much ice. The closest approach to a flower in sight were the large catkins or pussys of the willows. The catkins were all out of proportion to the trees and were even several times larger than those I had picked in March in Illinois.

The first of June was cool, but by June 15 with a blare of trumpets spring and summer arrived. It was initiated by the blooming of a tiny purple flower growing in dense mat-like bunches in sandy places. Then came a swift rush of

blossoms. Everyday saw from one to a dozen new flowers appearing. The little lavender flower lasted only about a week. As it passed its peak of bloom a large white composite, growing in standing water and in the wettest places, bloomed and by July 15 it had produced fruit and the plants had died. While it was covering the swamps and charging along streams and ditches, the purple blooms of Labrador Tea burst forth and quickly the tundra became a dark flame. The flowers were gone and tiny green berries adorned the bushes long before July was past. Hardly had the Labrador Tea got well started when arctic heather or, as the trappers called them, Arctic snowdrops joined in and drowned out the others. These flowers stood three or four inches tall, were over two inches in diameter, white, and with a brilliant orange center. The tundra became covered again with snow, a snow that was haunted by thousands of beautiful little black, orange, and yellow bumble bees. After the pollination of the flowers, the petals fell away, and the pistils seemed to grow until they were two or three inches long, looked like corn silk, and were twisted like binding twine. By July 20 these twists were unraveling and the tiny seeds were blown by the wind and buoyed by plumed silks.

Early in July, while the heather was lording it over the muskeg, the vetches or wild sweet peas began a plaintive song which swelled until it overwhelmed all the others. There were white, lavender and white, and bright purple forms, but the purple was the most abundant and on higher ground stood in solid carpets. These were in turn visited by Arctic bumble bees, and by the end of July many were in seed and most had faded.

While all this has been going on there was a beautiful undertone of woodwinds: tiny orchids and orchid-like pedicularis. First, little orange ones with brown tips poked their heads up among the Arctic heather. These were the elephants' heads or Lapland Pedicularis, and they were accompanied by a larger bright yellow form and a deep purple one grew abundantly in the willow thickets. By July 20 these were fruiting and the pods held dustlike seed. Hardly had they waned before at least three true orchids picked up the tune. These were a tiny lavender-flecked, cream flower and two light green to yellow species that grew in bunches on short stalks. These were still more abundant in the bush (the scraggly black spruce-tamarack forest that ends a few miles south of Churchill) and by the time I left in August they were just disappearing.

Turning back to the first movement of the symphony on the sand beaches of Hudson Bay, a bunch weed or creeper precedes even the grasses, and bore a tiny star shaped green-yellow waxy flower, which grew in solid mats like rugs on the sand. Further back a little pepperweed-like plant, the alpine chickweed, produced heads of small white blooms and became exceedingly abundant, but by July 16 was gone. All these flowers were strangers to me, but suddenly a deep blue blossom peeped out in patches on the sand and I recognized forget-me-nots. Later I learned that this old friend extended north beyond the Arctic circle and to the islands in the Arctic ocean past the mouth of the Mackenzie River. Back on the tundra another friend appeared too - violets. They were a little different in shade and hue, but they were still violets.

By the middle of July the willows were throwing cotton and in the wettest places cotton grass spread its white blanket until the tundra looked like a

cotton plantation. In the latter part of June I was wondering what a tiny dark green spike of a plant was going to produce. Finally it developed a pretty pink bud, but instead of opening, it simply swelled until it opened at the tip and there was a pink bell or vase-like flower with its orange pistil peeping from the pursed mouth. This was the wild Arctic rosemary. Then up on the hills among the rocks of the coast of Hudson Bay, the cranberries were in full bloom of delicate pink and white corollas. The birds, numerous as they were, still had been unable to eat all the berries, and berry and bloom were side by side on the same plant. Also dense evergreen-like shrubs produced beautiful sprays of white blooms, the white rhododendron.

Everything is in such a hurry. The symphony moves faster and faster. All during July new flowers pop up in the most unexpected places, until one becomes bewildered and exhausted trying to keep up with them. Daisies, black-eyed susans, composites, things that look like orchid-colored lilies-of-the-valley, fern-like plants, moth mullens, solomon seals and then during the last week of July there is a pause. The music ebbs and dies as blooms fade and obscure seeds and berries take their places, but the conductor's baton is still raised, and with a swift stroke the cymbals crash again. Indian paint brush, goldenrods, and fireweed burst forth, with the fireweed swelling into a crescendo that fills the black spruce forest with lavender flames and covers the tundra with a glow. It was fall.

The last movement was not quite complete, but I had been in Churchill eight weeks and must leave. By the end of August there would be frost again and the numerous berries would ripen to feed the vast flocks of birds coming out of the far north and later delight the palate of the caribou as they paw away the ice and now. In what seemed a fitting farewell a dainty white flower, a *Parnassia*, bloomed in the water of the pools near our cabin, many of them in such a hurry that they could not wait to reach the air, but opened under the surface of the water and swayed in the currents.

Whoever christened the tundra the barren lands could not have been an ornithologist, botanist, entomologist, or naturalist at all. Even a dendrologist would have found something of interest in the dwarf trees. The barren lands about Churchill, Manitoba, are anything but barren, for they are nearly tropical in the abundance of life that is present. Only the reptiles are apparently lacking.

In the region around Churchill there were not as many species of insects and other arthropods in evidence as farther south, but the numbers of individuals made up what the numbers of species lacked. After examining the country, I recognized from twenty to twenty-five different habitats in which the invertebrates were living. These may, of course, be divided into aquatic and terrestrial habitats. The largest aquatic habitat was the Hudson Bay, but, as it takes special equipment for a study of marine invertebrates, no attempt was made to collect them. During a trip on the ice patrol boat, the *Ocean Eagle*, numerous large jelly-fish, six to eight inches in diameter and brilliant greens

and blues, were seen floating at and just under the surface of the water. It was estimated that there were from four hundred and fifty to five hundred of these per square mile.

The shore of Hudson Bay for miles north and south from Churchill is precambrian granite alternating with sand and gravel beaches. As the tides rise and fall as much as fourteen feet, each of the sand beaches has a tidal flat of varying width strewn with rocks and boulders. When the tide was out small shrimps could be found under almost every pebble, so that they averaged from one hundred and fifty to two hundred to a square foot. These swim actively on their sides or backs when disturbed and are called sea lice by the trappers. They are said to strip the bones of any dead animal clean in a very short time.

Going up the beach from the tide flat, we come to an area of drift-wood and kelp which has a fauna all its own. Under the rotting kelp may be found hundreds of large brilliant red mites which probably feed on the decaying juices. These run very swiftly, and average fifty to a hundred per square foot. In the piles of kelp are found fly maggots which feed upon it and turn into one of the common gray flesh flies. They also became quite abundant and were found by the hundreds in each square foot of debris. Under the drift-wood were found an occasional ground beetle, and a few others.

Farther up the beach is an area of low, scattered, bunch-like weeds with small yellowish green flowers. Only a few insects were found associated with these, but on the sand, hiding among the bones and stones, were found large gray running spiders. These eat the flies and insects that alight upon the sand, and capture them by pouncing upon them. The area of bunch weeds blends into an area of tall grasses mixed with flowers, such as the purple and white vetches, the arctic heather, fireweed, indian paintbrush, and many others. In this group of plants were found bizarre clear winged leafhoppers, tiny yellow-green plant bugs, even smaller black plant bugs, and vicious assassin bugs that prey upon them and the flies. In the flower heads were tiny parasitic wasps which attack other insects, and buried deep in the flower cups were found the even smaller thrips. Thrips are odd little insects with beautiful feather-like wings and left-handed mouths. The right jaw is missing, and the left one works like a grater scraping the surface of the flower petals so that they bleed and the sap can be sucked up. As you walk inland, this grass and group of sand plants gradually blends into tundra.

As has already been stated, the shore of Hudson Bay is made up of great piles of precambrian granite. These rocks reach, near Churchill, a height of a hundred and ten feet and are piled over each other in a bewildering array of shapes and forms. Nearest the Bay, where they are exposed to the spray and ice action, the rocks are a bare rust color, but back a hundred yards they are covered with black, reddish brown, or green lichens. No insects were seen feeding upon these lichens, although in some sheltered southern exposures the encrustation of black lichens was an inch thick. Among the rocks, on a mat of sphagnum several inches thick, grows the true high tundra. This is a different type of plant growth from any in the world, except that of high mountain tops. It is made up mainly of lichens, or reindeer mosses, and true mosses. Some of the reindeer mosses are greenish gray, others almost white,

and still others almost jet black. They assume a variety of odd shapes, and when examined closely they remind one of the figures on a scratch pad in a telephone booth. Scattered among these lichens are clumps of Labrador tea, a low shrub with rusty leaves and a small berry, and an aromatic evergreen with a beautiful sprig of white flowers. Also there are tiny orchids, strawberry plants with one leaf and one berry, and cranberry plants with ten or twelve leaves and one or two berries.

Peculiarly enough this group of plants had very few insects related with it. There was a small black beetle that looks like a lightning bug without a light, which feeds on the flowers, and the larva of which lives on the soil surface and eats other insects. Mosquitoes were comparatively numerous, but they come from the pools among the rocks and only rest on the plants or seek out the flowers for nectar. Also there is a running spider, different from the one on the sand, which runs over the mat of lichens. These average about one to a square yard and during July each female could be seen dragging a little round ball behind her. This, the egg case, is made of silk and inside of it are many yellow eggs. The female drags it bumping along behind her, held by a thread, but grabs it in her jaws and fights for it viciously when she is disturbed. As fall approached a few grasshoppers could be found. Here among the sphagnum and plants, as everywhere in the barrens, were the most numerous of the insects, the springtails or snow fleas. These are tiny blue, gray, black, or reddish insects which have a mouse trap-like spring on the end of their bodies. They are hardly a sixteenth of an inch long and have two radically different shapes. All are wingless, but under the lens one kind looks like a small gray louse with bulging eyes, while the others look like tiny hunch-backed dwarfs. The spring is a tail-like piece which bends under the body and hooks onto a little catch. When the insect releases the catch it throws itself hundreds of times its own length into the air. They feed on the plants and mould, and in the winter so many will work their way up through the snow to the surface that they will color it black or reddish. A wide variety of mites, apparently three times as abundant as the springtails, were found in the sphagnum throughout the tundra and bush. These feed on the lichens and on other insects and were just barely visible to the unaided eye.

The Churchill river opens into Churchill Bay at Mosquito Point about six miles from the mouth. The entire bay is affected by the tides of Hudson Bay and, as the country is low and flat, the tidal flats are in some places two miles wide. The river and the bay were not studied, but during the first fifteen days of June a very large stonefly emerged from them. This was the largest insect taken at Churchill excepting the larger dragon flies. Stoneflies are peculiar flat insects and they ranged in size from small ones only one quarter of an inch long to the large ones nearly three inches long (which had been named in honor of Dr. Shelford).

The extensive tide flats are covered by a salt grass and several other grasses and plants. With these plants were found insects similar to those found on the grass area of the beach, but on the ground was an entirely different group of insects. Chief among these were a tiny greenish black ground beetle which was predacious on the insects, and a small bug with a large head and

bulging eyes, called a shore bug. These ran around on the ground and sucked the sap of the tender grasses. Early in June only the adults were found, but soon eggs were laid and by the first of July there were thousands of tiny black nymphs scurrying over the ground. The nymphs were full grown by the first of August, and by the fifteenth of August they were probably all adults with shiny black wings. The adults hide in the ground and are frozen there all winter until June.

Bordering the entire tidal area, just above the region where the action of the ice and water is intense, is a dense thicket of the low arctic willows and dwarf birch, in some places hundreds of yards wide. These plants are seldom over waist high and are found throughout the tundra in any low, partly sheltered, semi-wet situation. Willows throughout the continent are shelter for numerous insects and those of the tundra are no exception. They are fed upon by the caterpillars of several moths and the birches are extensively eaten by the caterpillars of wasps called sawflies. The sawfly larvae were easily recognized. They are generally greenish, have large bulbous heads, have a pair of legs on every segment of the body, and lie in a curled position when disturbed. If you pick them up they immediately curl and squirt a light yellow liquid from many pores on the sides of the body. They are readily eaten by birds and sparrows and red polls systematically worked over the birches hunting for them. When these grubs are full grown, in the latter part of July or the first of August, they leave the birches and crawl into the moss and sphagnum, where they spin a dense, black, almost box-like cocoon. Inside of these cocoons they change to the doll-like pupae and from these the small bright colored reddish, yellow, black, or blue wasps emerge.

The story is almost the same for the moth caterpillars. They eat willow leaves, but when they are full grown may or may not go into the sphagnum. The cocoons that they spin are flimsy white things which hardly cover the mahogany brown pupae and from them come small variegated colored moths or millers.

Besides these, there were numerous flies that came to the willows to visit the large catkins when they were in bloom. Inside of the florets of the catkins were thousands of black thrips different from those on the flowers in the sand area. Hanging on the stems and under the leaves where they are sucking the sap of the willows were found tiny, jumping, wedge-shaped bugs called jumping plant lice. These come out very early in the spring and are found on the twigs before the snow is melted or the plants are even in bud. In the south similar insects can be found on trees and shrubs all winter, so these of the north are following the same habits of their cousins. Later on, as the summer progresses, they almost disappear and their place is taken by leafhoppers, also small, jumping, wedge-shaped, sucking bugs, but of an entirely different group.

Throughout the barrens in the lowest, wettest places which may have standing, but not open, water are almost pure stands of sedges and grasses. These are the haven of numerous flies, especially mosquitoes, midges, and the very large and long-legged crane flies. Here the mosquitoes, black flies, and bulldogs, or horse flies, sit in hordes and wait for a passing meal. They rise in swarms and settle upon you, biting every exposed bit of skin, even to the palms

of your hands.

The great bulk of the barrens in the region of Churchill is covered with what I like to call the mixed tundra. This is rolling, hummocky, and covered with a sponge-like sphagnum into which you sink several inches at each step, and which is water soaked almost eternally. Each little hummock or high spot is covered with reindeer mosses and their associated plants; all of the low spots are filled with sedges and grasses or willows and birches, and the whole is dotted by innumerable pools and lakes, making walking in a straight line almost an impossibility.

In walking over this mixed tundra you encounter all of the insects that are found localized in the pure stands of different plants. They are all present, but in fewer numbers and the mixed tundra is not so heavily populated as the individual habitats.

The aquatic habitats on the land are numerous, but may be divided into permanent standing pools, permanent pools with streams running them, temporary pools that dry up in midsummer, and streams. The permanent pools may be further divided into those without any standing vegetation in them, those that have some emergent plants, and those that are almost full of plants. Among the rocks of the coast could be found all the different types of permanent pools, and also the temporary ones. These bits of water were, in my estimation, the most beautiful that I had ever seen. The rocks lie helter-skelter, every depression full of crystal clear, slightly yellow water and these pools take innumerable graceful shapes, from long slender streaks of water to many sided prisms. No two are alike and this coloring is a product of decaying vegetation.

Life in these pools is staggering in its abundance. All of the ordinary methods of estimating the numbers of individuals seem useless, and about all that could be done was to estimate by counting the animals in small amounts of water. During July there were apparently from 50,000 to 100,000 animals, large enough to be seen by the naked eye, per cubic foot of water, and the microscopic life would have been many times this.

When I arrived on June 7 the ice of Lake Isabel, three miles from Churchill, was just beginning to melt and had not yet risen from the bottom. Thawing out of this ice were many small stickle-back fish. These were stiff, but flexible like leather, and showed no signs of life as they melted from the ice. Their gills were expanded and their mouths open, but after a few moments there was a little motion in their fins, and several hours later they could dart about swiftly and seemed none the worse for eight months of refrigeration. Also melting out of the ice were thousands of water boatmen and water beetles. Water boatmen are oval to rectangular bugs with long hind legs like oars. They paddle themselves around in the water like a man rowing a boat and breathe by carrying air down with them as bubbles attached to the tip of their abdomens. The water beetles are black or brown and shiny, and also carry air down with them, but they carry it as bubbles under their wing cases. There was apparently only one species of water boatmen, but several species of water beetles. All of them could jump from the water and fly if they were disturbed.

Small frogs were released from the permanent pools as they thawed; a

dark green with a brown stripe along the side of the body and head. These sang and mated all during June. By the first of July they had ceased croaking and the tiny tadpoles were hatching. These would be frogs by the time the water began to freeze again.

Soon after the ice melted there were small water striders running on the surface of the water. These were half as large as those farther south, but they skated over the water in the same way as the southern forms. They and the water boatmen both laid their eggs during the last of June. The eggs hatched and by the first of July the water was teeming with little black nymphs of the water boatmen and hundreds of young water striders dashed around on the surface. Both of them are predacious and eat any smaller insect or animal that they can catch. By the fourth of August both insects were full grown and there were some new adults out swimming and walking around. These adults that emerge during August are the ones which freeze in the ice and do not lay their eggs until the following summer.

As the weather got warmer the surface of the pools soon became covered or partly covered with algae and other floating plants. Crawling through these islands of plants were many different kinds and shapes of beetle larvae, little six-legged creatures with long jaws and two tails, called water tigers. They warrant the name, for they are vicious little killing machines that attack any insect or animal that they can overpower. Furthermore, there were large, red, water mites and eel worms, aquatic fishing worms, and leeches, and crawling over the top of the algae were white fly maggots. These maggots fed upon the dead insects that fell onto the algae, and when they were full grown, during July, they turned into the oddest kind of puparium. When a fly maggot is full grown it quits feeding and its skin turns hard and brown, the puparium. Inside of this the grub shrinks away from its skin and forms another one, which in turn it sheds and turns into the doll-like pupa, inside of which is the fly. The puparium of this species took the shape of a dumbbell, one end small and filled with air, while the other end is large and contains the pupa. Thus the thing hangs big end down in the water, buoyed up by the small end which acts as a float, and when the fly is ready to come out it is already at the surface of the water and is in no danger of drowning.

The main diet of all of these predators is midge larvae or blood worms. Midges are small, long legged, thin bodied flies with beautiful, feathery antennae, which look like mosquitoes and are accused of biting by almost everyone. The only trouble with the accusation is that about half of the midges have almost no mouths and take no food at all, while the other half have weakly developed jaws and either eat nothing or take a little liquid such as flower nectars. When they come out of the water, generally early in the morning or after sundown, they fly together in great swarms, appearing as columns of smoke. The midges were most abundant toward the end of June and in the first of July. They formed great clouds hovering over the water and swamps. The males have beautiful, feathery antennae, and with these they can hear the vibrations of the females' wings with give a squeal similar to that of a mosquito. He seeks out a female in the hovering clouds and they mate. Among some species it is the males that dance and the females dash into the

crowd, are seized by a male, and they drop to a nearby plant to mate. All of the hovering and dancing that they do of evenings is but their mating ritual. Following mating the females fly to the water and the males die after a few hours. The females hang onto plants, dip the tips of their abdomens into the water, and lay their eggs. Some are even so bold as to crawl into the water and attach their eggs farther down. The eggs are laid in long strings like small link sausage and covered with gelatin which absorbs water and swells, twisting the string of eggs as it does so, so that they look like a screen door spring inside of clear or lemon jello. An egg mass will have several hundred eggs in it and be an inch or more in length when fully expanded. These sway in the water and are food for birds, fish, frogs, and numerous insects, but there are so many of them that plenty are left. Each egg hatches into a little worm which eats its way out of the jelly and sinks or swims to the bottom. On the bottom it eats the decaying plants and other organic matter and spins a little silken tube for itself. It attaches bits of dirt to this silk resembling the bottom debris and lives there all its life, only leaving home once in a while to build a larger one, or simply enlarges the old one. These larvae are so numerous that their tubes completely cover the bottom of the pools and may be several layers deep. As they grow larger the larvae turn red, for haemoglobin develops in their blood. The blood of most insects is yellow or green and has nothing to do with carrying oxygen as does the blood of higher animals, but in these wigglers, often called blood worms, there is this red material which assists in carrying oxygen to the cells. These insects serve as food for all of the wading birds and the other numerous predatory creatures, yet they are so abundant that their numbers are hardly affected by the carnage.

When the blood worms are full grown they leave their tubes and change into small, gray, free-swimming pupae. Here a great change takes place, for the truly aquatic worm turns into an air breathing pupa which must swim to the surface to breathe. On its shoulders are two tiny hornshaped tubes called trumpets, and the insect breathes through these. When the midge is fully developed inside of this it splits the skin along its back and crawls out into the air to dry. Many other aquatic flies have similar life histories.

Mosquitoes, which are found in the temporary and permanent pools and have but one generation a year, and the Corethra or non-biting mosquitoes, also live in these pools. The larvae of these insects catch food with their antennae. Then there are the crane flies with large gray larvae which have five finger-like gills on their tails and the pupae have long trumpets over an inch in length; and the rat-tailed maggots each with a long breathing tube on the end of the body. Further there are the caddis flies or fish flies, which are not flies but almost aquatic butterflies. Their caterpillars build houses or cases of pebbles, sticks, leave, or tiny snail shells, and live in them, pulling them along as they eat the sedges and algae. The adults look like moths with very long antennae sometimes five times as long as the body. Such was the teaming fauna of the Arctic pools.

Before I leave the pools let me mention just three more fascinating creatures. These were the fairy shrimps, the water fleas, and a rare and beautiful creature called Lepidurus. All of these are crustaceans. The fairy

shrimps are delicate, flesh colored animals that swim on their backs and wave their legs and gills with graceful rhythm. The males have large jaw-like structures on the head and the females have a long, slender egg pouch that extends from the base of the legs backwards, and when full of the round, pink eggs is almost as long as the tail. These creatures have a peculiar life history. The eggs are laid and the adults all die, as they are very short lived. In Southern latitudes the eggs must be dried and frozen before they will hatch but in the north the shrimps are found in permanent pools so the eggs either need only be frozen or those that have dried and been frozen are blown into the pools and hatch. A week or so after the ice has melted or in the last of June, the eggs hatch and the tiny fairy shrimps are found gliding through the water. They become so numerous in certain pools as to make the water almost a soup. Contemporary with them are the water fleas or cladocerans. These look like infinitesimal clams a little larger than the head of a common pin. They swim through the water in a jumping, jerking motion by stroking with their antennae. They have two eyes, a short spine-like tail, and the eggs are carried on the back under the shell. These were so numerous in some of the pools that they colored the water gray, and you could dip up double hands full which felt like the water was full of sand. Both the fairy shrimps and water fleas feed on diatoms and microscopic animals.

The pride of the fresh water crustaceans was Lepidurus, large and beautiful, found only in one pool and grew to be nearly three inches long. They closely resembled horseshoe crabs of the ocean shores, but had a heavier body and two tails. Apparently they fed on the algae of this one pool and were not very numerous in it. My first thought when I saw them was that ancient trilobites were still with us!!

In 1936 the "bush" was about four miles from Churchill at the nearest point, a scraggly remnant of the great continental coniferous forest. Black spruce and tamarack are almost the only trees present, and these are seldom more than thirty or forty feet tall. The trees are widely spaced and among them is an open thicket of arctic willows, dwarf birches, and grass, and in most places the area is very wet. Each spruce tree is on a little knoll, so that its roots are above water, while the tamaracks grow even in standing water. Out on the tundra in the shelter of rocks the spruce grows either prone on the ground or mostly prone and sends up only one or two shoots to brave the cold, northern blasts. These shoots may be five or six feet tall and an inch or two in diameter, but they can be forty or fifty years old. There are no limbs on the north and even the heart wood is lopsided as there is no, or very little, growth on the north side. This scrub forest is the haven of mosquitoes, black flies, and deerflies. There were times when it was difficult to see out through my netting, the mosquitoes were swarming around me so heavily. By the middle of July dragonflies were out in full force, and if I would stand still they would come, alight on my netting, and pick off the flies. A dozen dragonflies flying about me would reduce the local fly population in a very few minutes. Dragonfly nymphs were found in streams and pools in the bush, attacking and eating aquatic insects, and they in turn were fed upon by Canadian jays.

Many tundra plants, even to the reindeer mosses, invade the bush, so that

many of the insects taken there were similar to those of the tundra. Ants were very scarce on the tundra, but a wood ant was found in almost every stump and fallen log in this scrub forest. The queens of these colonies laid their eggs very early in the year, and in the first of June, the young grubs were found being cared for by the workers in chambers above the water line. Full grown by the last of July, they did not form the naked pupae until the first of August. The adults must have emerged before the advent of cold weather.

The spruce and tamarack did not have very many insects that were indigenous to them, but they did have the same little jumping plant lice on them as inhabited the willows. Furthermore, they were heavily populated by spiders. With all of the millions of flies, it would be natural to expect a great variety of spiders, and this was true. Running spiders were found in all dry places. The trees were so covered with the webs of the orb spinning spiders and net spinners that on a dewy morning the foliage appeared covered with a fine, clinging tent. In the tundra the willows had their hosts of spiders, and even among the sedges and grasses. Besides the web spinning species there were many varieties of solitary hunting and jumping spiders. These could be found on all types of plants except the lichens and reindeer mosses, and were especially abundant among the flowers. During June young spiders that had hatched were ballooning. In ballooning they crawl up some object that gets the full force of the wind and spin out several lines of silk which eventually offer enough resistance to the wind that the spiders can let go and are pulled away and go floating into space. By this method spiders have been known to be blown hundreds of miles, even being caught over a mile in the sky. By the first of July all had settled down to the business of spinning webs and eating.

There were apparently very few bees except bumble bees. The arctic bumble bees are beautiful things with black, yellow, and orange stripes. They range in size from large ones, as big as the southern species, to tiny ones, hardly as large as a honey bee. Several species were found, and they carried masses of pollen on their legs after having visited the many tundra flowers. Besides these were the butterflies. Early in July there were many brown butterflies which were soon followed by a galaxy of yellow and white butterflies. These were the most difficult insects of the tundra to catch, for at the least disturbance they would bounce into the air, be caught by the high winds, and away they would go.

Many of the birds that Twomey collected were infested with chewing lice, Mallophaga, which run over the body and eat the feathers and skin scales, and with mites and fleas. Apparently the sparrows were the only ones to have many fleas, while the ptarmigan were the lousiest of birds. Some of the birds, as the Labrador Longspurs, Smiths Longspurs, and the Northern Horned Larks, were almost free of lice. The insect annihilating ability of birds was forcibly brought to me when I took two young Northern Horned Larks and attempted to feed them and keep them well and fat. They ate over a half of a pint of fly maggots a day plus whatever other insects I would throw into the cage with them.

~~More about the complex ecology of the subarctic is told in the final chapter.~~

10. *Mourning Doves*



September 1937 found us on the campus of Iowa State College (now Iowa State University) at Ames and enrolled in zoology, still majoring in entomology. Dr. C. J. Drake, head of the department, was an entomologist whose specialty was tiny, beautiful, delicate, lacy tingids or Lace Bugs. He equated ecology with physiology and upon reviewing my material from Churchill, declared that it was not worthy material for a doctorate dissertation! I worked on the Churchill

material anyway which resulted in several long papers. The topic that he felt worth my examination and experimentation was the digestive rate of the House Fly.

Through the urging of Aldo Leopold and other conservationists and because of the crash in duck populations, Congress had passed the Pittman-Robertson Act which laid a tax on ammunition and sporting equipment to support studies at Wildlife Research Units in selected colleges and universities. Iowa State was one of these! Dr. George Hendrickson was teaching the new science of Wildlife Management, Tom Scott, one of his graduates, was heading the Unit and Paul Errington was conducting his research in predator and prey relationships for which he became world famous.

I took Hendrickson's course, expressing the opinion that wildlife management was closer to ecology than was Drake's House Fly. My graduate fellowship paid \$60 a month and I was assigned to assist in an anatomy laboratory, a required course for girls majoring in home economics. Femininity, another phase of ecology that I had overlooked! Iowa State was on the quarter system and after Christmas Dr. Hendrickson approached me and said that there was an opening in the Unit for research concerning the Mourning Dove and its management, and would I be interested as it seemed closer to ecology. I was somewhat sated with the gastronomic capabilities of the House Fly and this fellowship paid \$85. I quickly acquiesced. And of that moment, the thrust of our lives, Lucy and I, was changed!

Hendrickson made arrangements that at the spring quarter of 1938 we were to go to Lewis, Iowa, where Frank Berry, a local naturalist, would help us become acquainted and where there were reputedly many Mourning Doves. The Ford had suffered many problems including a cracked piston which in turn knocked a hole in the side of the block so we were driving an old green Plymouth. With trepidation we pulled up in front of Frank's garage next to his lovely home, introduced ourselves and he immediately took us in to see Ethel. These two great people had important effects upon our lives, thinking and future. A block down the street was a house that they had reserved for us. As we approached it, it seemed very large, had two rooms and a kitchen downstairs, two rooms upstairs, an iron heating stove, running water in the kitchen, and a "Chic Sale" toilet out back; and we had not a stick of furniture!

Lewis was a farm town of 600, mostly retired farmers, a two-block

business district bordering the town square and park. There was a post office, general store owned by Brick, a hardware store, notions shop, barbershop, volunteer fire department, several churches and a good consolidated school; three tree-shaded streets, a cemetery at the east end and a lovely oak-wooded county park nearby.

Frank said that Brick (a redhead, as his name would imply) had secondhand furniture above his store. From him we obtained a bed, chairs a dollar apiece, a refrigerator for \$50, and a great oak table (when extended, seated most of my scout troop in Nebraska) for 50 cents, a dollar for an old desk someone had built out of a pump organ (at which this is being written 55 years later) and other odds and ends of household furnishings. And we moved in!

When we had inspected the house and inquired about the rent, the landlord had said, "Well, I have to have seven dollars!" Lucy and I glanced at each other, "Seven dollars a what?" "Well, I have to have seven dollars a month to make it pay!" Our first home (not counting student apartments) cost us seven dollars a month!!

Yes, there were Mourning Doves, nests in almost every tree by the time summer was over. I found and kept records on 1100 nests the first year, 1500 the next and in desperation reduced the study area to only three blocks the third year and still had 400 more.

We returned to Ames for the winter quarter of 1938-1939 for more course work taking our pet doves with us, Peep, Blondy, Flutter, Mike and Blindy. The following spring we were back in Lewis in a larger house, across from the park and by the blacksmith shop. Captive doves were housed on front and back porches necessitating using a side door to enter the house. This caused some friction with Lucy but we bore up under it. And our final Lewis home was another little house on one of the elm-shaded streets.

When should we have children? We were both at the close of our second decades and decided when I passed my preliminary examinations then we could inseminate. The preliminary oral exam was set for 8 March 1940 and Jeannette was born 12 January 1941, but that is another story.

As we were under the protective wings of Frank and Ethel, the town's leading citizens, the whole town of Lewis knew us. Everyday I walked the streets carrying a climbing rope, a cheap pair of binoculars and a note book. Carefully examining each tree and shrub about each home, I climbed to the dove nests and recorded their contents as well as other details. I also did this at five farmyards within a few miles of town. At Ames in 1980 for a 50th reunion of the Pittman-Robertson scholars we drove to Lewis for a short visit with Ethel, for by then Frank was gone. It was June and I walked my old beat to see if doves were still present. They were not, but as I walked, head in the air looking at tree tops a voice from an open window called out, "There's the birdman!", the owner remembering me from childhood. The same thing happened in 1992, again in June, when I was searching for doves. Madge Roberts called to me, to tell me that she had married one of my Boy Scouts (and she bought a copy of "Whistling Wings").

The town barber, Lyle Burkhalter, and his wife Letha had a large old

farmhouse at the edge of town where they were raising three strapping boys: Lyle, John and Burt. Lyle Sr., Letha, Lucy and I developed a deep and lasting friendship. It became a Sunday evening event to go to their place for a heated game of pinochle, men against the ladies. Letha was a flighty scatter-brain that you couldn't help but love. Her evening refreshments became traditional topics of wonder. In haste or forgetfulness, she served an apple pie in which she had forgotten the lower crust, a chocolate cake for which she neglected the chocolate, and other disasters! Each evening's serving was precluded by excuses as to why her offering was not this or that.

Hair cuts were 35 cents and Lyle barely made enough to feed the family. Some years later he fell dead at his shop. Lyle Junior was a mechanical wizard and he wandered off. Burt, the baby and Letha's darling went off to war and returned unscathed only to be killed in a car accident a few miles from town. Letha married again, her second husband who was much older also died and she was living in Peoria when we last saw her, happy that John was there and could see that she was well taken care of. (She too passed away soon after.)

Studying the lifestyle of Mourning Doves, summarizing our data, and preparing for the fateful preliminary examination kept us occupied. Having approached my Master's examination not as well prepared as I should have been, I vowed that this would not be the case at this prelim. I approached it much as I had the chemistry examination several years before. Being a pack rat, I had a folder of each course that I had taken during my college career in which were the assignments, questionnaires and results. During the months before March 8, I reviewed each one, paying especial attention to the questions. For those unacquainted with the system, each Ph.D. candidate has a committee of five to seven professors in the disciplines related to his major field. The chairman of the committee is usually his senior professor and advisor who guides him in his studies so as to prepare him for the confrontation with this committee. The committee assembles twice, once for the preliminary oral exam and if you weather this, the final review a year later. At the preliminary review, theoretically, they can ask you any question in their discipline or related to it and other professors from other departments may drop in and quiz you as well. The objective of all of this is not to terrify you or cause a heart attack, but to put you on the defensive so as to learn how well you think and how effective you might be in the development of research and knowledge. My committee included Dr. Drake, entomologist; the dean of men, a bacteriologist; a botanist, a physiologist, Dr. Hendrickson in wildlife and two others whose disciplines I cannot remember.

All said that they had had experience with me and waved the written examination except the botanist who called me in for an interview. He said, "I have not had you in my classes, so for background will you please sit down and write an outline of the position of water in nature!" Have you ever thought of all of the places a raindrop can go or the things that can happen to it before it becomes a raindrop? Three hours and a pile of sheets later I was still outlining water in nature. He called a halt!

Came the fateful day! We met in a ward room of the Dean's office; small, with tables, comfortable chairs and a blackboard. In deference to his position,

Hendrickson called upon Dr. Drake to begin the discussion. His charge was "go to the board and write down the divisions of the animal kingdom". This was beginning zoology and as I wrote each phylum and class, I wondered why he wanted this. Then he said, "Now write under each class or order the number of species that occur in Iowa!" This was impossible! Life is so complex and so ramified that no one can know all of any group that might occur in an area as great as Iowa. I turned to the Dean and asked him how many kinds of bacteria or protozoa there were. After some discussion he hazarded a guess. I wrote it down and then called on each to help me out with his discipline. Knowing how Drake felt about ecology, I suddenly caught on and turned to him with "Dr. Drake, I think that when we have completed this exercise you are going to say, "How can an ecologist expect to encompass all of this?" He grinned, admitted to this, and excused himself. This set the tone for the entire discussion. It no longer was a quiz, it became a seminar of many topics and many opinions. Our noise and laughter was heard in the outer office.

Hours later Lucy crept into the office to see how I was doing. "I don't know", replied the secretary, "but we can hear them laughing and talking." I passed!

Back at my desk I tried to recall some of the questions that I had been asked. If you can't answer them, don't feel badly! After five decades I can't answer them either.

1. What relation to forest management does game have?
2. Does game compete with the forest?
3. Have you ever seen damage done to the forest by game?
4. When does game compete with livestock?
5. Who controls game in national parks?
6. Which has alternation of generations, animals or plants?
7. Are the alternations of generations in animals and plants homologous?
8. Name some animals with alternating generations?
9. Are ecology and physiology synonymous? How do they differ?
10. How would you alter a forest so as to favor the white oak?
11. What is the selection system, shelterwood system, of forest management?
12. What is the ecological position of the Linden?
13. How many kinds of animals and plants are there in Iowa?
14. How many kinds of bacteria, higher plants?
15. How many protozoa live in man, name them?
16. How many kinds of tapeworms in dogs, name them?
17. How can a man hope to encompass all there is to know about life pertaining to an ecological or conservation problem?
18. What is a species?
19. What is a gene?
20. What would you substitute in place of a gene?
21. What is La Markian evolution?
22. What is classification, subjective or objective?
23. What are natural and artificial systems of classification?
24. Write down the scientific name of the Mourning Dove.
25. What do the stems of the latin words mean?

26. Why is (Linn) written after a name?
27. What are the differences between the eastern and western forms of the dove?
28. Why give them separate names?
29. What is the scientific name of the Domestic Pigeon?
30. What would you expect the first life on earth to be like?
31. What physiological systems would first life have to have?
32. Isn't membrane selectivity also sensitivity?
33. What are the differences between plants and animals?
34. Are distinctions between classifying systems as families, orders, etc. distinct?
35. What is Gingko?
36. Which is higher in evolution man or pig?
37. Which is more specialized, a man's hand or a pig's foot?
38. Which is older geologically, pig or man?
39. When did pigs appear and when did man?
40. Do animals breed to the limit of their food supplies?
41. What about territories among rabbits?
42. What about territories among birds?
43. How do territories limit breeding populations?
44. What is Elton's work?
45. Do you know what is going on among Michigan's researchers?
46. Can a man isolated in the field do graduate work?
47. Do you have time to think in your field work?
48. What facilities are presented to you for criticism of your work in the field?
49. Do you wildlife men have discussion groups?
50. Do you have time to read in other subjects while in the field?
51. What about interspecific strife among rodents?
52. What are haploid and diploid generations in plants?
53. Is a drone bee haploid or diploid?
54. What does the scale in a pine cone come from?
55. What does spermatophyte stand for? What do the stems mean?
56. What is the Greek meaning for sperms?
57. What does the Gingko pollen look like?
58. How is the seed of a gymnosperm formed?
59. What are the orders of gymnosperms?
60. How many species of birds, mammals, insects, invertebrates occur in Iowa?
61. What effect do rodents have in aerating soil and in the amount of moisture entering the soil?
62. Do rodents affect run-off in frozen soil?

Etc. Etc! Oddly enough, even though my major interest before this had been in entomology, they did not enter into discussions of insects as Metcalf or Shelford would have. It was an interesting exercise in mental acrobatics!

But to get back to the last year at Lewis. The writing of the dissertation ended as hundreds of pages. Lucy was pregnant and we continued field work

as much as possible. As an entomologist I was caught up in an ornithological problem and gradually my interest in and need for information about birds broadened. I began recording the interrelationships between doves and other species and when a tornado struck Portsmouth, a small town north of us, I went to it to see what birds survived and which had the greatest survival capability.

One of the above questions was obviously asked by a lab person. "Do you have time to contemplate when in the field?" This is among your greatest pleasures in the field. You wait for hours for things to happen and when they do, you have more hours in which to contemplate what you saw and what was its meaning. During the fall, I lay on a warm south exposed slope with the clear blue sky above to watch birds that migrate in the daylight. Counting doves that pass singly or in small groups, thrilling at the gossamer streams of swallows, both low and high, the occasional hawk, and others. Each guided by its own flight plan and none easy to decipher. Not as exciting as the wild cries of the great Vs of Sandhill Cranes crossing Nebraska's sandhills from horizon to horizon, but equally as thought provoking and stimulating.

As I wandered through town each day from yard to yard visiting each tree and searching it for nests, I often chatted with the homeowners. One octogenarian spent a busy summer digging a trench along the side of his house, the full length of the yard and ending in a deep hole. He devoted several hours each day to his digging for it was to be his new septic tank. The hole for the tank itself was large and took a long time to complete. When the digging was finished, he called a mason to tile the ditch and line the tank with brick. By fall all of the masonry was complete, the plumbing attachments accomplished, and the whole covered with dirt. One morning the old man was seeding the site with grass to repair the scars to his lawn and when I came by he smiled, looked proudly at his work, said how pleased he was to have it finished and commented, "This is a good septic tank and I don't think I'll have to build another for at least ten years!" Now, an octogenarian myself, I understand what he meant!

When labor began, our doctor who was an osteopathic-physician, entered Lucy in a hospital in Omaha where through a glass door I watched delivery of Lucy Jeannette on 12 January 1941. My mother was greatly relieved for she was concerned that she would have no grandchildren. This turned to worry that we would have a lot of kids when Clara Ann was born in Ord, Nebraska 19 months later, 1 June 42.

[1937: Smaller bugs to bite 'em! Nature Notes IV. 1938: Where do spring insects come from? Nature Notes V; Bridge Work. Nature Notes V. 1939: Consider the lowly cockroach. Nature Notes VI, Black Death. Nature Notes VI. 1940: Zoological Jottings, Nature Notes VII, Introduction, Paper wasps and social wasps; Origin of domestic animals; Butterfly scales; The American Chameleon; Notes on the western fox squirrel; Anatural law; Research is a state of mind; Land snails; The polar bear; Hostess Golden Rod; Animal notes. 1941: Zoological Jottings, Nature Notes, VIII. Animal signs; Dinosaurs, terrible lizard; Wanton waste; Bull shakes; The Sparrow Hawk; The head of man and of the grasshopper; Animal equivalents; Animal interrelationships; Flights of insects. 1942: Zoological Jottings, Nature Notes. VIX. Report of the 7th Annual Midwest Wildlife Conference; A naturalist on Midway Islands.]

The degree was conferred at Ames with due ceremony on 8 June 1941 and I had a position as game biologist with the Nebraska Game, Forestation and Parks Commission, to be stationed at a town in Cass County mid-center in the state at the edge of the sandhills and on the Loup River, Ord. The salary was \$125 a month! The last time that we had seen so much was in the summer of 1933 while I was still working with W. P. Flint and it had taken me two degrees and eight years to get back up to that economic level. Tuppy, the pet doves, Lucy, Jeannette and all packed the car and sought Ord where we rented a nice brick-fronted house next door to the County Attorney, soon followed by a van loaded with our now accumulated household goods.

11. Nebraska



Ord, a town of about 3000 was an epic of urban middle America, a Peyton Place. An ebb and flow of loyalties, personal conflicts, the good, bad and indifferent in aspirations, admonitions and adamantys, an accumulation of personalities that made living there a kaleidoscope of color and form. To go beyond this would entail another book of fun and escapades.

My job was to learn something about Ring-necked Pheasants, Prairie Chickens, Sharp-tailed Grouse and other upland game birds so that with this information the Commission could more effectively and intelligently adjust and control hunting seasons. Hopeful, but impractical for in the end the hunters controlled things! Asked what I needed, I was provided with a Ford panel truck equipped with a cot, desk and cabinet, screen for windows, containers for specimens, etc. Small but very effective, but, Oh, if we had had the oversized tires and 4-wheeled drive of today. I spent many hours trying to get it out of sandhill and mud potholes, and it was insulated neither against heat nor cold.

I was a greenhorn entomologist suddenly turned wildlife biologist and birdman. I had never seen a Prairie Chicken or a Sharp-tailed grouse, nor a hen pheasant in flight, but I knew a cock pheasant and a quail. Seeking out the game warden of Cherry County (bigger than Massachusetts) I asked him to show me the countryside and its wildlife. As we drove the graveled roads of the vast grasslands, a bird flew in front of us. "Was it a pheasant or a grouse?" "A pheasant!" "How do you tell one from the other in flight?" On we drove, and as birds flew before us above the waving sea of grass I asked about each. My thirst for knowledge offended him! What was I trying to do, show how dumb he was and how smart I. As we toured on, he hated me more and more. He never spoke to me again and was always absent when I was in his territory!

Across the street lived a 14-year old youngster with abundant energy and little direction. He, Bob Marks, came over to watch and to help us unload. He and Lucy both got a lesson in painting when she had him paint the walls and ceiling of the basement, as interesting a pattern of spilled and misdirected paint as could be designed. One of Bob's pastimes was throwing rocks at or driving away the numerous beautiful Fox Squirrels that dwelt along the tree-lined streets. I urged him to cultivate them instead, saying that they could be tamed to eat from his hands. He doubted it and said so, but here was a very active and fertile mind, a potential Eagle Scout, Valedictorian of his High School

1938: Insect aerial populations, *Ent. Soc. of Am.*, 31; Floral symphony on Hudson Bay, the Beaver, March. 1939: Red bats at Lewis, Iowa. *Jour. Mammology*, 20; Cooing activity and censusing of the mourning dove. *Jour. Wildlife Mangt.*, 3; A method of tree climbing, *Jour. Wildlife Mangt.*, 3. 1941: Ecology and management of the mourning dove, *Zenaidura macroura* (Linn.) in Southwest Iowa. *Iowa State College Jour. of Sc.*, 16. 1942: Spring aphid aero-plankton, *Ent. News*, 53; Mourning Dove production in southwestern Iowa, *The Auk*, 59; Summer activities of bats in Iowa, *Jour. Mammology*, 23: 430-434.

class, honor graduate in Pharmacy, and soon the Fox Squirrels in the neighborhood were coming to him. In summer we explored the sandhills together as father and son, so much in fact, that Lucy became jealous of him and said that I was neglecting Jeannette and her!!!

With Cam on the way, we needed a bigger house. On an adjacent street was a big old frame building, two stories, porch on three sides, modern hot air furnace, electricity, inside toilets, eight rooms, on a large lot. The family who had owned it had lost it because they could no longer pay their property taxes. It had stood idle for many months with no one to pay the back taxes. Our friend, the County Attorney who lived next door with a wife, two sons and at least two goats, suggested to Lucy that it would be a good buy and right for us. It was! We paid \$400 of back taxes, obtained title, and renovating it somewhat, we lived in it until I was assigned duty at Mare Island in Vallejo, California, and Lucy sold it at more than 200% profit, \$1500. Such a house in California nowadays would bring \$300,000 or more; truly, inflation is worse than depression!

It was here that the two girls started out in life. They were as inventive of mischief and as adventurous as their father had been at that age. We had a housekeeper who had lived in the house when she was a child, and she was quite deaf. Hearing aids were both expensive and inefficient so she often turned the aid off to save her batteries and in so doing, gave the girls freedom for innovation such as dragging all of their bedroom furniture to the center of the room, mounting it and disassembling the light fixtures. Or finding their mother's high-heeled shoes while she was out, they paraded nude at midnight in the neighborhood until some horrified neighbor notified Lucy. Lucy was never sure when attending bridge, a dinner party, or a social event what the evening would bring from home! This problem was partly solved when we obtained a talented teenaged babysitter, Kathleen Clement, now a world-renowned artist with her studio in Mexico City.

We had a massive black dog with a white throat patch, for Tuppy had passed on from a tumor; a cross between a great dane and a Chesapeake. He was so big and gentle that the girls could ride on him; riders whom he could shake off when he tired of the game. He could stand on the ground and put his front feet on the downstairs window sills, and on several occasions frightened guests who thought they were seeing a man peering in the window.

There was a Dutch family that dryland farmed a few miles north of Ord, the Aagaards, three sisters and three brothers, I believe, and all unmarried. The youngest brother, Jim, was an ardent hunter and conservationist. He and I developed a lasting friendship. An excellent marksman, his hunting dogs were mongrels, one of which was a superb retriever. During Pheasant season this dog would retrieve every bird that he brought down and Jim related an occasion when he was with a party of hunters and attempted a long shot which he was sure he missed, the bird sailing over a hill followed by the dog. Sometime later the dog returned with a pheasant and while his friends regaled him with complements on his shooting, Jim refrained from telling them that the bird was uninjured. The dog had caught and brought back a live one!

Jim was a tenor with a powerful voice and had sung in choirs and on the

stage when younger. One of his dogs would howl when he played the piano and sang, so he trained the animal to paw at the keys and "sing" with the notes. Jim and his singing dog became well-known characters.

He never hunted on his own land and when spring planting was over would sow what seed was left in the corners of fields, thereby providing both cover and food for wild creatures. The Aagaard place was a showplace of deer, pheasants, quail, doves, raccoons, possums, and many other species. When all but Jim and two sisters had passed on and they were aged, he bequeathed the farm to the Nature Conservancy to continue its wildlife protection.

The sweeping sandhill plains of Cherry County and north central Nebraska rolled infinitely to all horizons and Prairie Chickens boomed in the spring. I must have a horse to wander over this vast sea of grass and sand! Local game wardens suggested ranchers who might not look upon my probing their pastures for game with jaundiced eyes. One had a 20,000 acre spread and I drove the field truck into the expanse of yards, bunk houses and corrals before the rambling ranch house. Sure, he would be glad to let me wander over the pastures, just so I closed the gates, and he had any number of horses that I could ride. Had I ever ridden? My negative answer brought a gleam to his eye! I looked him over, the horses and especially the environment and decided to try elsewhere. First, the country didn't look all that wild and secondly, I had a feeling that he would use me wherever possible to gain points with the Game Commission and to gloat about it to his neighbors. I drove on!

A grass-threaded trail bounced along the Calamus River, an ever-flowing branch of the Loop, and the small house and barn of the Will Dunne ranch hove into view. Crossing a narrow bridge, the trail followed the stream and turned into the ranch yard. Will Dunne walked from the barn as I drove up. Before me was the river with stacks of native hay cut from the tall grass of its floodplain, in patches along the water were dense willow thickets, in hollows among the grass covered sand dunes were thickets of wild plum, and behind me was a patch of scraggly corn. A Golden Eagle watched from a hillock atop one of the sandhills and Prairie Dogs barked in the distance. The place looked ideal for abundant sandhill wildlife.

After an explanation of what I wanted to do and that I would be willing to rent a horse if he had one, Will smiled and said that they had only one horse since it was a small spread, only 2000 acres and a few hundred head of cattle, but I was welcome to use it. I went into the barn where this horse was tied in a stall well-filled with manure and wind-blown sand. It was an ugly knot-headed gelding, white and dull grey, spots of darker grey were scattered over its body amid which were U-shaped scars. Otherwise the animal was in good condition. Will explained that it had been an Indian horse of uncertain origin, bearing Indian brands among several, and that somewhere in its past it had been beaten by someone wielding a curry comb. This accounted for the semi-circular scars, and "don't ever try to curry him when you bring him in, he'll kill you!" His name was "Nuts"!

Yes, I could try to ride him if I wanted to, and I should board him from the left. He was a tall horse, quite capable of putting up with me on his back all day. But could I stay with him that long, the look in Will's eyes said. I'm five foot eight, 160 pounds in those days, and I had to reach up to grab the saddle horn, after Will showed me how to saddle him and how to wait until he let out his breath to tighten the cinch. The stirrup was so high that I had to struggle to put my left foot in it and then jump and swing myself into the saddle as Nuts quickly side-stepped in hope of leaving me in the air. I settled in the saddle, clung to the horn, picked up the reins while Will stepped back, anticipating my plunge into the manure-strewn corral. Nuts disappointed him by merely snorting and every Wednesday for three years until I went off to war (only got as far as California) Nuts and I spent eight to ten hours enjoying the wild hills and the beautiful valley, Mrs. Dunne fed me lunch and supper, and I slept in the truck.

There are many stories that I could tell about these good years in the sandhills with Nuts as a companion among the pheasants, Bob-white Quail, Prairie Dogs, Prairie Chickens, Coyotes, hawks, eagles and the exquisite wildlife of this great waving plain. Every wildlife biologist who has had the opportunity has experienced the joy and wonder of studying animals from the back of a horse. He is at once your blind, your camouflage, and your carriage. Mammals, birds, even snakes and other reptiles consider the combination of man and horse as one and give it no mind. I spent hours and hours in the saddle, knee hooked around the horn while the horse munched on harsh sandhill grass and I peered into the lives of the creatures around us.

Once we were on a hillock above the river where I could watch pheasants and grouse feeding in the new green grass of spring, Prairie Dogs in a town below were barking their little barks accompanied by jerking tails, and Burrowing Owls silently stood and stared before their burrows. I looked down and beneath Nuts was the nest of a Blue-winged Teal. He was astride it and the brown hen had not flushed. In an impasse, she looked up at me and I looked down at her. How could I move the horse without him stepping on her? I discussed this with myself for a moment and then touched Nuts with my heel. He knew that he was standing over the duck and carefully stepped to one side before we moved on. On another occasion, I tried to get him to move up to a Spotted Skunk. The little animal stood up on its front legs in self-defense and aimed its vent at us. I urged the horse forward, but he circled the skunk just beyond its range. On another occasion, I descended from the saddle at a small thicket, dropped the reins, for he would stand, and circled the thicket to flush quail which I thought were in it. They flushed directly beneath Nuts' belly, he reared up and ran back to the house to let me walk in. All through the years he taught me that I was the only dummy in the team.

During the first weeks of the study, each time that I returned home I raved about my day in the saddle and about this horse character. We planned to visit the ranch one day and Lucy was excited about seeing it and the horse. We had guests in for supper a few nights before the trip and it was the subject of conversation and discussion. In a conversational lull Lucy spoke up with "What I want to see is Elliott's Nuts!" There was a gasp followed by

uncontrolled laughter.

The sandhill roads were nearly all gravel and it was many miles to Dunne's ranch and many more on to Valentine and the Valentine Wildlife Refuge which was mainly for waterfowl, upland game benefitting as well. Each week after my day of riding at Dunnes, I would go on to the refuge for another day or so, returning to Ord by Friday or Saturday. Wildlife was so abundant along these roads that even with a low level of travel, speeding cars took a heavy toll. In three years and 77,000 miles of driving, I tallied nearly 7000 victims of over a hundred species of birds, mammals and reptiles. Using the specimens that I could salvage, I made a study of food habits of Mourning Doves and Ring-necked Pheasants and another of an eyeworm that infected the pheasant's eyes which may have contributed to their heavy kill.

In the truck was a five-gallon milk can of diluted formaldehyde solution into which I put the specimens collected from the roads. Rather than come to a halt when approaching a roadkill, I would slow down, open the door, and clinging to the steering wheel, reach down and scoop it up as I passed. This method became a matter of sport and since there was little traffic it was only mildly hazardous. Upon seeing a dead dove ahead, I slowed, reached down to snatch it up, my fingers slipped from the wheel and I fell into the road. As I rolled to my feet, I noticed a car approaching from behind me, grabbed the bird, dashed after the car, jumped in and sped on. To this day, I wonder about the thoughts of the approaching car's occupants to see this damned fool fall out of his truck and run after it!

The kill of animals along roadsides by rapidly moving vehicles has long been recognized. In areas of wildlife concentrations it amounts to considerable loss. During the period January 1941 thru April 1944, I traveled 77,000 miles over Nebraska highways. Nebraska has a large wildlife population and while its highway travel was not as intense as that in more heavily populated states, highway losses to wildlife were great. In recognition of this, records were kept of all identifiable remains found as well as the type of road surface, adjacent cover or crops, and time of year.

More than a hundred species and a total of 6723 individuals of animals other than invertebrates were examined. Amphibia made up 17.4%. Of these, toads of at least two species were most commonly killed, and made up 14.5% of the total. Reptiles included 18.2% of the highway victims. The two most commonly found were the Bull Snake, 4.7% of the total. Turtles made up 4.0% and half of these were Box Turtles.

Birds, including 56 species, made up 23.5% of the casualties. Of these only six species, which habitually feed along roadsides or fly low across the roads, were found in excess of 1%. Pheasants made up 5.7% of the casualties, Burrowing Owls 1.3%, Red-headed Woodpeckers 2.7%, Prairie Horned Lark 1.6%, House Sparrow 4.0% and Western Meadowlark 1.3%.

Of the mammals, 29 species made up 40.5% of the total and the bulk was rabbits 25.1%. Seven species were noted in excess of 100 individuals; domestic



Figure 1. *Upper right:* Clara Phillips, Chicago, Ill. (circa 1906). *Left:* Howe Alexander McClure, Chicago, Ill. (circa 1910). *Lower Right:* Clara McClure, aged 24, and Buddy, aged 8 weeks, Chicago, Ill. (1910).

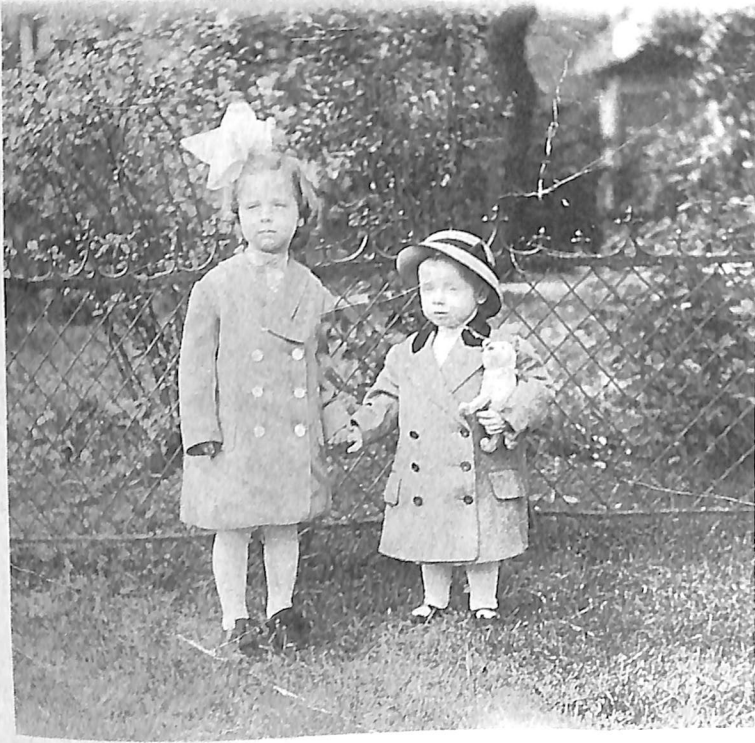


Figure 2. *Upper:* Dad, Mom, me, and friends at St. Joe, Michigan (1913). *Lower:* Marjorie De La Mater, aged 4, Buddy, aged 2, somewhere in Chicago.



Figure 3. *Upper:* A boy and his dog (Tawney), Seattle, Wash. (1922). *Lower:* The red-headed kid, Wallace ?, Hazel Kinkade, and Marjorie De La Mater, on a picnic at a park near Decatur, Ill. (circa 1921).

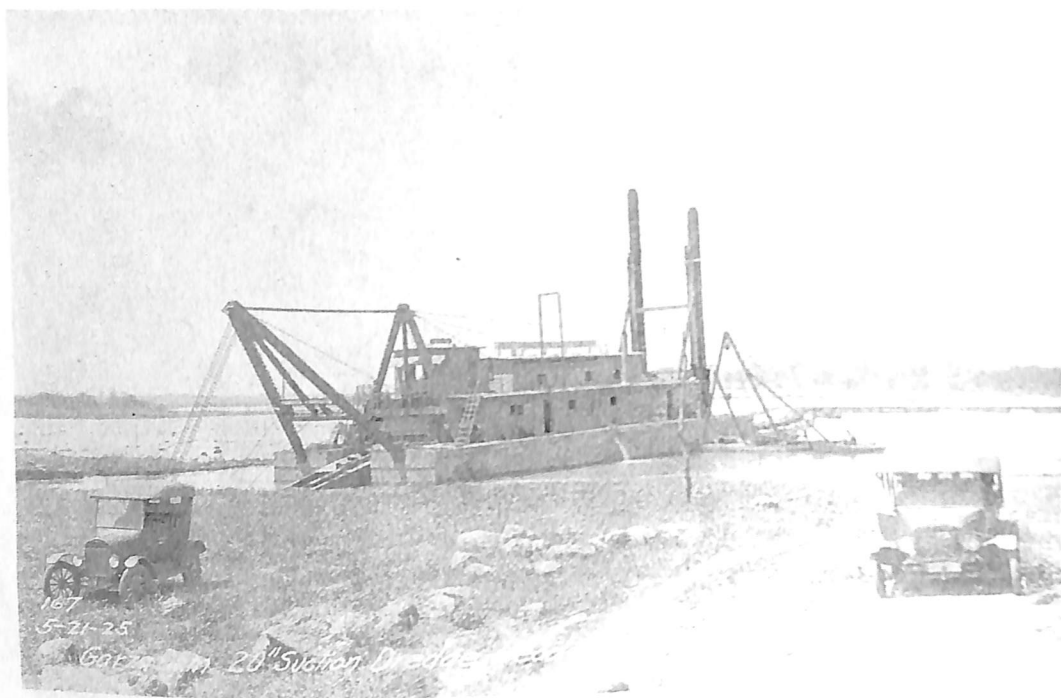


Figure 4. Pouring the mud levee from mud consumed by a great dredge of the Puget Sound Bridge and Dredging Company; the resulting dam to create Lake Dallas for the city of Dallas, Texas (29 April, 1925).



Figure 5. *Upper:* Hazel Kinkade, K's oldest daughter, and I for a swim in Lake Sammamish, Wash. (1925). *Lower:* Roland Gillette, Danville, Ill. (1928).

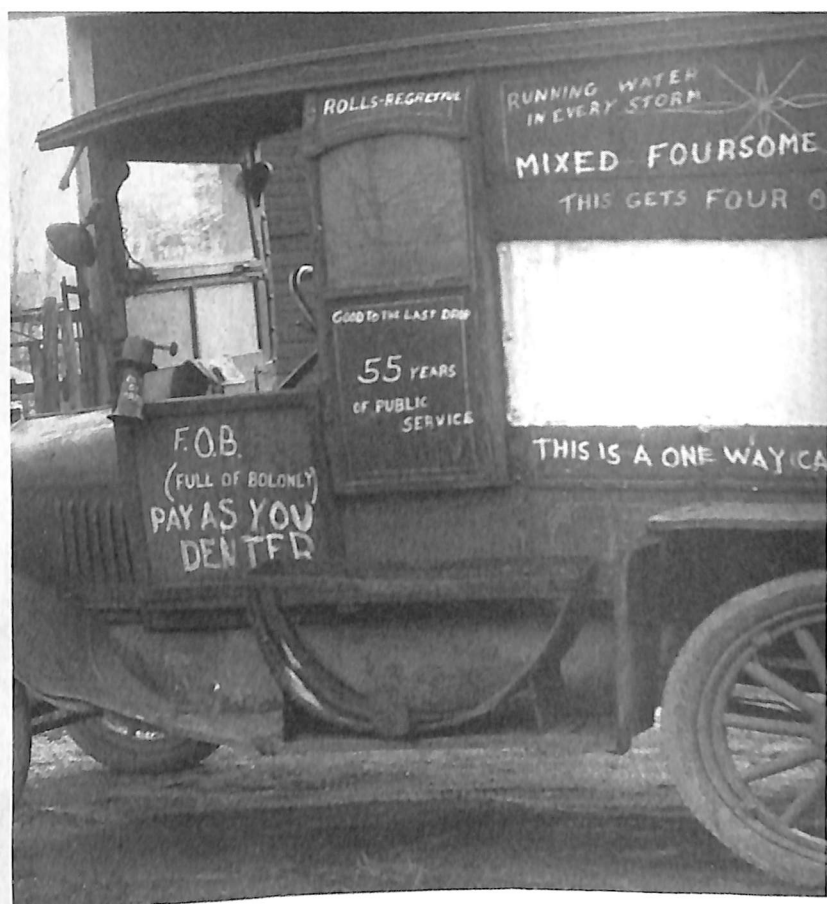


Figure 6. Curtis Publishing House delivery truck and recreation vehicle, Danville, Ill. (1928).



Figure 7. *Upper:* Finishing the cement work on the Gateway Bridge at Brownsville, Texas (25 June, 1928). *Lower:* The Gateway Bridge at Brownsville, Texas across the Rio Grande nears completion at flood stage of the river (14 May, 1928).



Half Ton Of Silver Used to Pay Mexico Duty on Half Steel Put in New Bridge

More than one half ton of silver, 16,737 pesos, was brought by train into Matamoros Friday from Monterrey on the order of the Puget Sound Bridge and Dredging company as payment of customs duty on 195 tons of steel which constitutes the south half of the new Gateway bridge now being built between Brownsville and Matamoros. This amount was four times greater than has ever been through the Matamoros customs house on a single consignment before.

The total amount of duty, according to the present Mexican tariff rates, amounts to close to \$10,000, according to Arthur Kinkade, business manager for the bridge company.

amount had already been turned over to A. C. Vasquez, Mexican consul here, and invoices were submitted through him. J. G. Philen, Jr., customs broker of Brownsville, handled the arrangements.

The silver required by Mexican regulations was procured through the First National bank of Brownsville in connection with the Ramon Exilondo bank in Monterrey. It was handled through M. G. Garza & Bros., who as agents for the Monterrey bank turned it over to Samuel Cobb, special officer and employee of the bridge company, for delivery to the customs officials.

The silver was shipped in canvas bags of 1,000 pesos each.

According to Mr. Kinkade the duty

was paid in conformation with present Mexican tariffs but under protest, and a petition for refund accompanied the payment. This protest was made, said Mr. Kinkade, in view of the fact that the United States and the Canadian governments have already conceded that such international structures of mutual benefit over international streams are held duty free to the low water mark of the territorial limits. Payment of duty to these two governments does not begin at the center of the stream as heretofore.

"I feel that the government officials in Mexico City will take the same viewpoint as have the United States and Canada as it offers great encouragement to builders of struc-

tures which will be so great a factor in favorable relations between countries so connected," said Mr. Kinkade. "Canada and the United States have taken the stand that the benefit derived in this way by both countries would more than offset the amount of money acquired by duties and that duty free structures are much more attractive to prospective builders."

"Matamoros officials and especially J. V. Trevino, special industrial inspector, have been helpful in every way in this transaction and in all our other problems on the other side and have given us their cooperation in every way as have the citizens of the town," Mr. Kinkade concluded.

April 1928

Figure 8. Upper: Arthur Kinkade, Lake Dallas, Texas (1925).
Lower: K delivers a half ton of silver to pay customs duty on the bridge (April, 1928).



Figure 9. *Upper left:* Ralph E. Lane, aged 22, a senior in mathematics at the University of Illinois. *Upper right:* Ralph and Elliott in Urbana, Illinois (June, 1931). *Lower left:* Dorothy Folden (September, 1930). *Lower right:* Lucile Copper (1931).



Figure 10. Upper: W.E. Shelford's class at flooded Reelfoot Lake, Tenn. (April, 1933). Lower: Busload of Shelford's students (April, 1933). In both photos Alice Schoup is third from right.

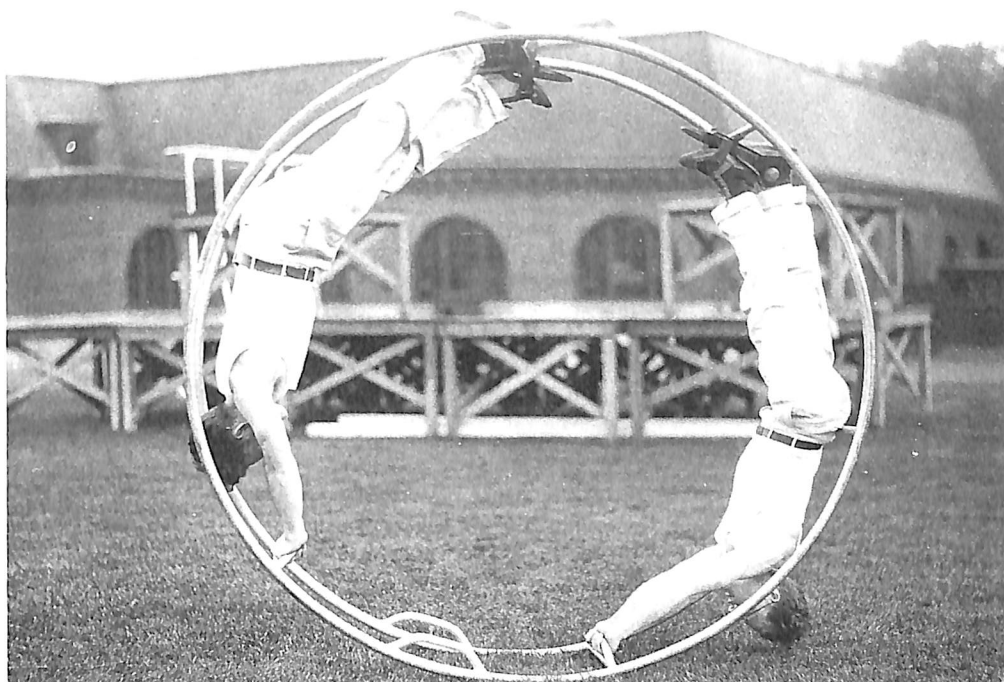


Figure 11. *Upper:* A meeting of Hexapoecia in front of Entomology Bldg. McClure, B.D. Burks, C.L. Metcalf, W.P Hayes, W.V. Balduf, E.R. McGovern, W.E. MacCauley, John Karlovich, and others (December, 1931). *Lower:* Elliott and Ralph on the rhonrad at University of Illinois (16 May, 1931).



Figure 12. Upper: Roland Gillette as city employee at Denver, Colo. (10 September, 1931). Lower: Eagle, Rolly, and McClure returning from Denver, somewhere in Missouri (14 September, 1931).



Figure 13. *Upper:* Edwin Natural Bridge, Natural Bridges National Monument, Utah (5 September, 1931). *Lower:* South end of Cliff Palace, at Mesa Verde National Park, Colorado (7 September, 1931).

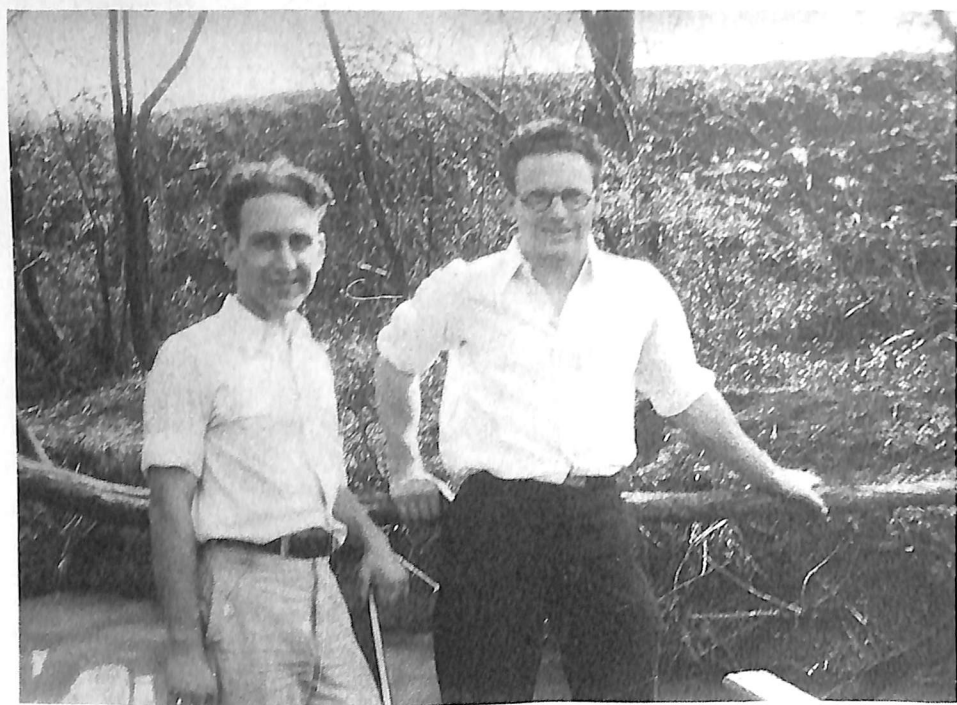


Figure 14. Dad, Evelyn, and Mary (aged 3) in front of 1304 E. Main, Danville, Illinois (19 June, 1932). Lower: Ralph and I near Urbana (8 May, 1932).



Figure 15. *Upper:* Our wedding picture (1 October, 1933). *Lower:* Lucy at her father's grave in the family cemetery on the farm in Vermilion County, Ill., five days after we were married (6 October, 1933).

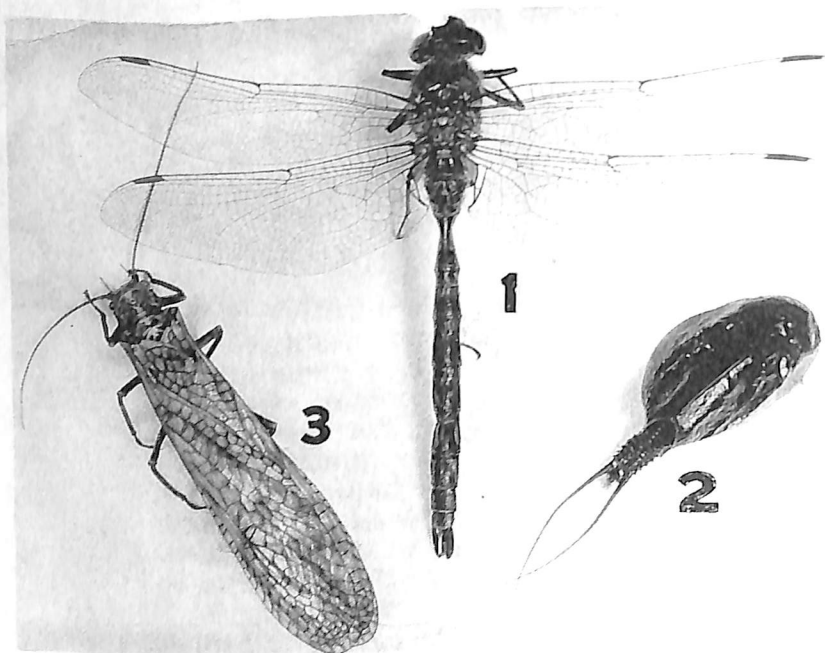
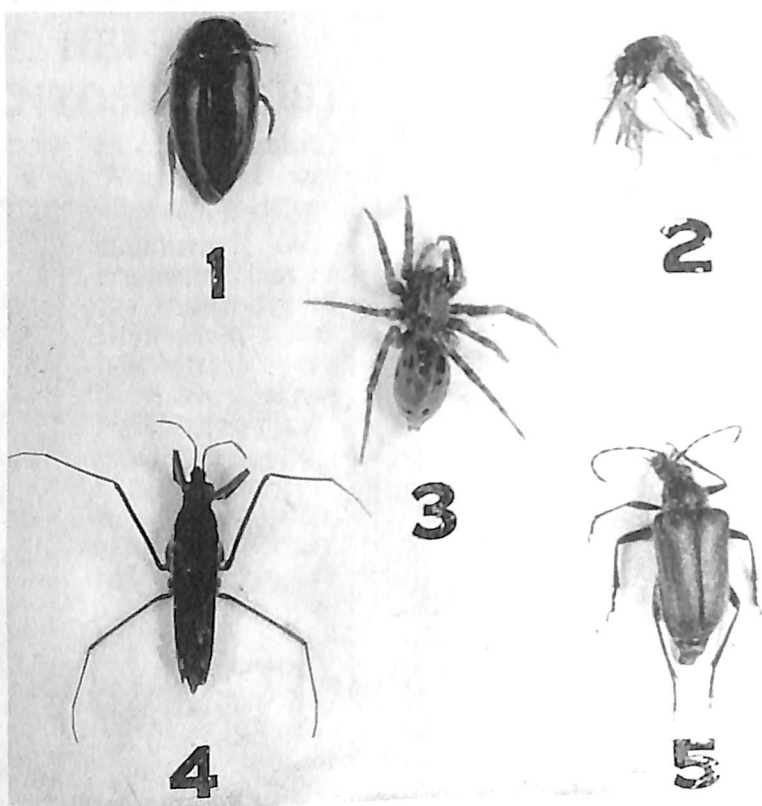


Figure 18. *Upper*: Insects of the tundra: 1. Water beetle; 2. Arctic mosquito; 3. Running spider; 4. Water strider; and 5. Flower beetle. *Lower*: Aquatic creatures of the tundra: 1. Dragon-fly; 2. *Lepidurus*, an aquatic crustacean; and 3. Shelford's stonefly. Churchill, Manitoba (July, 1936).

H. ELLIOTT M'CLURE, TREE EXPERT, GIVES INFORMATIVE TALK

IN ADDRESS TO FREEPORT
GARDEN CLUB HE PRESENTS
HELPFUL SUGGESTIONS

BY HENRIETTA S. HILL

Nothing could have been more ideal than having the Garden club picnic and the delightful talk by H. Elliott McClure, of Peru, Ill., on "Trees," on Flagstaff hill, Krape park, Wednesday. The setting was perfect, the day could not have been lovelier and the talk was something to remember.

Mr. McClure, a tree surgeon, is an authority on trees, their soil needs, their planting and trimming, and he gave many helpful hints that may save newly-planted trees, which frequently do not survive re-planting.

Did you know that when you transplant a young tree that the side that is towards the south must be placed in that same position in its new setting? Well, that's one of the things he told. The reason for this is that the bark is thinner on the side towards the south.

"The growth of trees" said Mr. McClure, "is affected by temperature, humidity, water table, animal complex and position of planting. The grass and trees compete for soil moisture. In cities, trees are greatly affected by smoke, gas fumes from cars, cement paving and sewer pipes, so we see that trees are growing under most unsatisfactory conditions as compared to those of fifty years ago or in their natural and former settings, in the forests."

The speaker said that a "year guarantee," given by many nurserymen, means simply nothing, as an incorrectly-planted tree may often live a year and die after that, as it takes about that length of time for a tree to lose its sap.

"Roots of new trees should never be pruned, unless diseased or unless the tree is of the evergreen variety," continued this tree lover, who knows every process of planting. "When trees are watered be sure to get below the grass root," he explained. "A large tree can drink up a 100 gallons of water a day. Sufficient water may be provided if tiles are sunk about a foot and placed a branch—spread from the trunk of the tree and filled with water two or three times a week."

In closing Mr. McClure gave a few "don'ts" for tree planters and growers, as follows:

"Don't lime a lawn under an oak tree; it paralyzes the roots and the tree will turn yellow.

"Don't scrape bark off trees.

"Don't allow copper sulphate to be put on a tree."

Elimination of Rot

Mr. McClure stated that rot does not attack a healthy tree, but when rot is discovered it must be eliminated if the tree is to be saved. The diseased part may be cut out and the hollow painted and filled with cement. Borers weaken the tree structure and if allowed to remain, will cause the collapse of the tree, Mr. McClure said.

"Trees would never die if they were not attacked by insects," said this tree expert. He told of one tree in Illinois that is five hundred years old. "When painting the portion of a tree, from which rot has been removed, the best product to use is an asphalt asbestos roofing paint," continued the speaker as "this is the only paint that insects will not go through."

Mr. McClure, after telling of the correct way to plant a tree, with south side towards the south, as it was before, cautioned the planter to be sure to put peat moss and fertilizer into the hole, before the tree is placed in position, and he emphasized the fact that the roots should be well encased in a large ball of earth. "Newly-planted trees should have their trunks well wrapped in burlap and this should be allowed to remain on the tree for fully two years and then must wear off rather than be removed," he said. "This prevents sun burn," Mr. McClure added.



Figure 20. Upper: Lucy and Elliott beside George Bellman's new Chrysler. **Lower:** George Bellman visiting us from Seattle at La Salle, Illinois (12 May, 1937).

A NEW HOMINID FROM SOUTHWESTERN IOWA¹

H. ELLIOTT McCLURE and LUCY E. L. McCLURE

During 1940 there was some evidence of a new hybrid anthropod in the vicinity of Lewis, Cass Co., Iowa. The quantity of evidence accumulated during the summer and fall and became quite conspicuous by early December. The actual specimen was not observed until 10:55 P. M., Jan. 12, 1941, at which time it was surrounded and captured by four explorers under the guidance of Dr. G. W. Marston. They had considerable difficulty cornering the elusive creature, but thru the cooperation of the junior author finally succeeded in tracking it down.

Description.

The single specimen taken proved to be *Homo sapiens* var. *mcclurensis* named, for convenience in discussing, Lucy Jeanette. It was a female weighing 7.75 pounds or 3.52 kilograms. The overall length was 20 inches with an armspread of about 20 inches. Body was glabrous, however a slight pilosity on the head was rufous. Eyes blue, and general surface coloration was erythrous. Voice, loud and raucous, emitted almost constantly (like father).

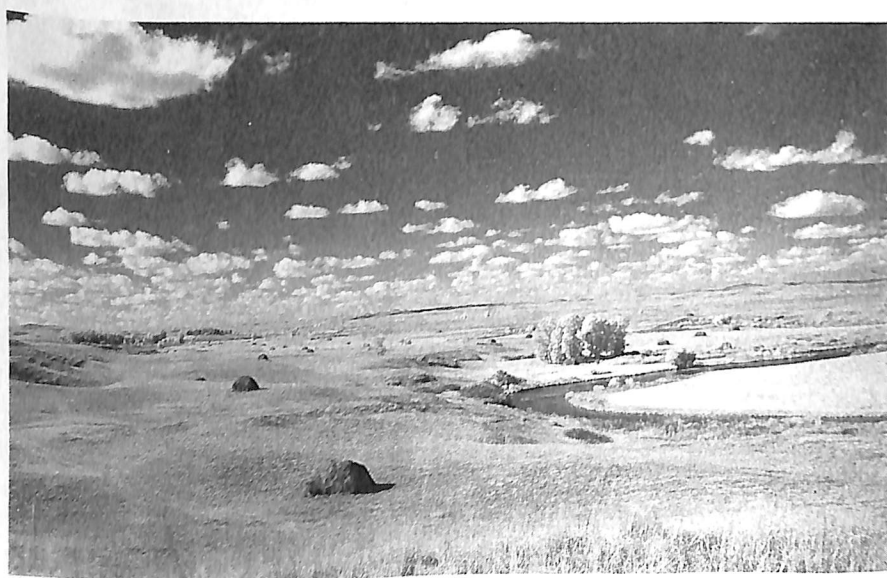
Locale.

Jeanette was not collected in her natural habitat at Lewis, but had migrated to Omaha, Nebraska, where she was seized in the Anton Kani Hospital. She is expected to remain at Kani's for ten days and will then be found back in her normal home den. She is accompanied by the junior author, who is taking good care of her and who is "doing fine herself."

Since the hominid has now been discovered, it is hoped that careful observation of its activities may be made and recorded in future publications. Little is known of her diet, but it seems to be restricted to milk at present. Its most conspicuous activity seems to be a flailing of the arms and legs accompanied by lusty vocalization.

Lewis, Iowa

1. Research Paper No. 1313 of the McClure Cooperative Research Lab. Proj. 1940. Work on this project done under the supervision of Dr. G. W. Marston, D. O., Lewis, Iowa.



**Figure 23. *Upper*: Nebraska sandhills, near Dunne's Ranch (1942).
Lower: Dunne's Ranch on the Calamus River Valley (9 October, 1941).**



Figure 24. *Upper:* McClure and Nuts on the Will Dunne Ranch near Burwell, Nebraska (24 July, 1941). *Lower:* Banding a hen Ring-necked Pheasant at White Water Marsh, Valentine Refuge, Nebraska (9 January, 1942).

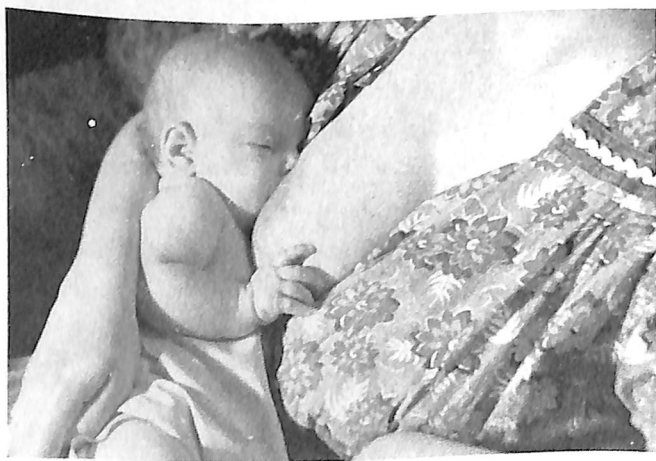


Figure 27. Cam and Lucy, Ord Nebraska. (August and September, 1942).



Figure 28. *Upper:* Releasing a Ring-necked Pheasant after it had healed a severe breast injury from flying into a barbed wire fence. Valentine Wildlife Refuge, Nebraska. (April, 1942). ***Lower:*** Starving Ring-necked Pheasant (it should weigh more than four pounds) during the severe winter of 1943. Valentine Wildlife Refuge. (26 March, 1943).



Figure 29. *Upper:* Jeannette, age one year and Tuppy, age five years at Ord, Nebraska. (8 February, 1942). *Lower:* Jeannette leads Cam in the snow at Ord Nebraska. (February, 1944).

cat, 3.4%; Striped Skunk, 1.1%; 13-lined Ground Squirrel, 2.6%; Kangaroo Rat, 4.7%; Cottontails, 9.1%; Black-tailed Jackrabbits, 6.1%; and White-tailed Jackrabbits 2.3%. To the rabbits should be added unidentified rabbit remains totaling 7.3%.

Twenty-six species made up 89.8% of the total kill while the remaining 75 species accounted for only 10.2%. The list of highway victims was as follows: Tiger Salamander 99, frogs 105, toads 977, sand lizards 95, Bull Snake 398, Blue Racer 62, Garter Snake 320, Hog-nosed Snake 78, King Snake 1, Prairie Rattlesnake 9, Snapping Turtle 5, Box Turtle 132, Painted Turtle 15, Soft-shelled Turtle 1, Mallard 1, Green-winged Teal 1, Blue-winged Teal 1, Redhead duck 1, Red-tailed Hawk 1, Swainson Hawk 5, American Rough-legged Hawk 2, Golden Eagle 1, Marsh Hawk 2, American Kestrel 17, Prairie Falcon 1, Prairie Chicken 4, Sharp-tailed Grouse 19, Chukar Partridge 1, Domestic Turkey 10, Guinea Fowl 10, Ring-necked Pheasant 386, Sora 1, Coot 4, Upland Plover 1, Mourning Dove 55, Domestic Pigeon 10, Yellow-billed Cuckoo 27, Black-billed Cuckoo 9, Barn Owl 3, Screech Owl 19, Burrowing Owl 93, Short-eared Owl 5, Night Hawk 11, Flicker 22, Red-shafted Flicker 1, Red-headed Woodpecker 183, Eastern Kingbird 54, Arkansas Kingbird 12, Prairie Horned Lark 109, Bank Swallow 14, Barn Swallow 17, Cliff Swallow 2, Magpie 1, Blue Jay 6, Crow 12, Brown Thrasher 15, Robin 9, Shrike 11, House Sparrow 265, Western Meadowlark 95, Redwing 11, Orchard Oriole 1, Baltimore Oriole 7, Bronzed Grackle 14, Brown-headed Cowbird 2, Common Goldfinch 1, Lark Bunting 9, Vesper Sparrow 1, Lark Sparrow 7, Field Sparrow 1, Lapland Longspur 1, Opossum 5, Common Mole 1, Raccoon 2, Weasel 2, Spotted Skunk 43, Striped Skunk 74, Badger 2, Dog 49, Coyote 2, Cat 228, Franklin Ground Squirrel 16, Black-tailed Prairie Dog 1, 13-lined Ground Squirrel 175, Western Chipmunk 8, Fox Squirrel 48, Pocket Mouse 5, Kangaroo Rat 316, Muskrat 38, Norway Rat 10, White-tailed Jack Rabbit 167, Black-tailed Jack Rabbit 413, Cottontail 618, Pig 6, Cow 1, Horse 1.

There was considerable difference in the ratio of highway usage by motorists and the highway mortalities from year to year. The total mileage for the writer each year was 1941, 29,850; 1942, 23,680; 1943, 21,485. This was a ratio of 100: 79.3:72.1. The ratio of observed casualties was 1941, 100; 1942, 109; 1943, 46. Information furnished by the State Department of Roads and Irrigation indicated an over all State highway usage ratio of 1941, 100; 1942, 83; 1943, 72. Correcting the ratio of kill based upon highway use indicated the following: 1941, 100; 1942, 137; 1943, 64. Other observations suggested a general increase of wildlife in 1942 over 1941 and a general decrease in 1943. This is borne out by highway mortality which showed a gain of 37% in wildlife populations in 1942 and a drop of 54% in 1943, to a level 36% below that of 1941.

The following chart indicates the number of dead animals along the highways per one hundred miles of driving. The average in 1941 was 9.6 animals per 100 miles. This increased to 12.1 in 1942 and decreased to 5.7 in 1943. The three year average highway loss was 9.1 animals per 100 miles, with a July peak of 22.0. The increase in loss of animals was 26% in 1942 compared to a 17% reduction in highway travel. This could be construed to mean an

increase in wildlife of nearly 43% (by corrected highway kill ratio above it was 37%). In 1943 the average kill was 40% less than that of 1941 and the highway use was down 28%. This would mean an animal population approximately 12% less than that in 1941 (Corrected highway kill ratio above would make it appear 30% less.) Determining the actual increases or decreases in wildlife populations from highway mortalities would necessitate further study, but it is evident that the losses are proportional to the population densities.

A comparison of Highway Mortalities in Central Nebraska for the Period March 1941 through March 1944. Figures Indicate the Dead Animals per Hundred Miles of Driving.

| Month | 1941 | 1942 | 1943 | 1944 | Avg Kill |
|--------------|------|------|------|------|----------|
| January... | | 2.1 | 1.2 | 2.0 | 1.8 |
| February.. | | 1.4 | 2.5 | 1.0 | 1.6 |
| March... | 6.5 | 9.9 | 3.0 | 1.1 | 5.1 |
| April.... | 3.3 | 3.1 | 6.6 | | 4.3 |
| May.... | 6.1 | 6.4 | 7.0 | | 6.5 |
| June... | 9.3 | 14.0 | 6.3 | | 9.9 |
| July... | 27.1 | 26.6 | 12.3 | | 22.0 |
| August... | 15.2 | 21.6 | 12.1 | | 16.3 |
| September... | 16.3 | 32.2 | 5.0 | | 17.8 |
| October.... | 5.6 | 7.4 | 4.0 | | 5.7 |
| November... | 2.1 | 5.8 | 1.9 | | 3.3 |
| December... | 4.4 | 1.2 | 1.8 | | 2.5 |
| Average | 9.6 | 12.1 | 5.7 | 1.4 | 9.1 |

A species may be present on the highways for several months, during its normal periods of activity, and at no time make up a large percentage of the mortality. Other species during certain months, or even weeks, may have a period of extensive movement and make up a large part of the mortality for that month or period. This relationship between time and space for twenty-four of the commonest victims was as follows: 66.0% of the frogs were killed in August, but made up only 6.0% of the highway losses for that month. In March 94.0% of the Tiger Salamanders were found, and this made up 21.5% of the highway losses. In August 29.8% of the toad losses for the year occurred, and they made up 25.3% of the highway victims. Of the lizard losses 45.2% occurred in June, making up 7.5% of the losses for that month. In October 24.2% of the Blue Racers were killed, but these made up only 3.5% of the losses. The Hog-nosed Snake had 29.5% of its losses in September, but made up only 2.3% of the victims then. Although only 3.7% of the Garter Snakes were killed in October, they made up 16.6% of the victims for that month. The Bullsnae ratios were more balanced for 25.1% of the year's losses in May

made up 21.7% of the animal victims. The Box Turtle suffered heavy losses in June, 37.1% of the year's kill, but made up only 8.6% of the victims for that month. In July 56.3% of the Mourning Dove losses occurred, making up 1.3% of the kill. In August 38.7% of the Burrowing Owl losses occurred, making up 3.1% of the kill. Pheasants had 8.5% of their losses in April, 14.9% of the kill for that month. In August 31.1% of the Red-headed Woodpecker losses came, making up 5.0% of the kill. Also in August the Eastern Kingbird sustained 27.7% of its losses, 1.3% of the victims. Eighteen percent of the Horned Lark losses were in March and made up 4.5% of the kill. July was the month of greatest loss to the Meadowlark, 44.2%, but they made up only 1.8% of the loss for that month. Also in July 63.4% of the House sparrows were downed, making 7.5% of July's losses. Among the mammals 9.4% of the Striped Skunks were killed in April, making up 3.1% of April's victims. Seven percent of the cats were killed in December including 16.1% of the losses. Also seven percent of the Kangaroo Rats were killed in January, but they included 23.0% of the kill. In April 8.5% of the Cottontails were killed, making up 24.0% of April's victims. Also in April 10.8% of the year's kill of Black-tailed Jack Rabbits made up 20.0% of April losses. In February the White-tailed Jack Rabbit sustained 6.5% of its losses, which was 14.2% of the February victims. In July 64.6% of the 13-lined Ground Squirrels were killed, making up 5.0% of the loss. The 24 species made up 80.8% of the year's mortality and only during September, November and December did their losses constitute less than 70% of the monthly total.

July was probably the month of greatest animal abundance, although this was not always reflected in tallies of living individuals. It was, however, indicated by highway victims which were most numerous in this month. Of all of the amphibia recorded 41.0% were crushed in July; 25.0% of the reptiles; 37.4% of the birds; and 27.0% of the mammals.

The percentage of the year's losses that occurred each month for each species was a graphic picture of its seasonal activity and population density. Frogs appeared on the highways in May after having left their hibernacula and during the mating season. They appeared again in greater numbers in August after having completed their life as tadpoles. At this time they were leaving ponds that were drying up and were seeking other water. The Tiger Salamander did not appear on roads in numbers except in March when they were leaving their winter hideouts. Toads appeared on the highways in May, reached a peak of abundance in July and disappeared from them in October. Both the Spadefoot and American Toads migrated in great numbers from ponds in July. On favorable days and in favorable weather they could be seen hopping along black-top or gravel roads by the thousands. Five miles south of Basset, on July 18, 1942, a band of small Spadefoot Toads, hopping west along a gravel road, passed me at a rate of a hundred a minute. The weather was warm, partly cloudy, and the time about noon. While I counted them for twenty minutes they left the road and took to grass beside it when the sun came out and returned to the road when the sun was obscured by a cloud. I could not determine the extent of this migration, but 47.7% of the years road kills occurred this month.

Heaviest losses to sand lizards of several species occurred in June. They were unexplainably absent from the highways that I traveled in September, appearing again in small numbers in October. Blue Racer Snakes appeared in May and showed peaks of losses in June and October. The Hog-nosed Snake appeared in May and it too had two periods of heavy loss, July and September. The Gartersnakes appeared a month earlier, but showed the same pattern of loss as the Hog-nosed Snakes. Bullsnake losses were fairly uniform from June through October with a peak in May. Snakes came to black-top surfaced highways on cool sunny spring or fall mornings to warm themselves. This accounted for heavy losses in May and October. Box Turtles appeared on the highways in May, reached a peak of abundance in June and disappeared from the roads in September.

Bird species had losses commensurate with their migratory habits and population patterns. The Mourning Dove losses started in May, reached a peak in July and stopped in October when the bulk of the population had migrated. Burrowing Owl remains did not appear until June and 47.3% of the losses occurred in July. They no longer appeared on the highways after September. Ring-necked Pheasant losses occurred every month of the year but peaked in July and August. Red-headed Woodpecker victims were found May through September, greatest numbers in July. Another summer resident, the Eastern Kingbird had the same loss pattern. Horned Larks were killed every month but November, and peaked in March and July. Meadowlarks were victims over a seven month period, from March through September. These, too, were most commonly found in July. Although House Sparrows were permanent residents, they were not killed on the highways until May when juveniles were fledging and these losses continued into September also.

Among the mammals, the numbers of highway victims also varied between seasons and among species. The Striped Skunk appeared every month but February. Domestic cats were present every month with low peaks of loss in March and July. The Kangaroo Rat suffered its greatest losses in July, but was present every month. Cottontails were also most commonly killed in July and the same was true of Black-tailed and White-tailed Jackrabbits. The 13-lined Ground Squirrel appeared in April after leaving their winter quarters, were in greatest numbers in July, and disappeared in October when they returned to their winter burrows.

While I was picking up dead victims, I also counted the numbers of living Mourning Doves, Ring-necked Pheasants, Horned Larks and Meadowlarks along the highways. The highway losses did not seem to be closely related with the visible populations, but appeared to be related to the feeding habits of the birds or to their age and experience. Birds inexperienced in the speed of approach of vehicles and in the judgement of these speeds were more apt to be killed. This is borne out by the following chart, in which the percentages of total kill are compared to the percentages of the total living population seen along the roadsides. Heaviest snow and severe weather occurred in March in Nebraska when 22.2% of the year's Horned Lark roadside population was counted. These birds habitually gathered in large flocks to feed and enjoy the warmth along the roads and roadsides where graders had swept off the snow

and ice. Because of this habit 18.3% of the total kill was suffered in March.

The loss of inexperienced and young birds was evident in summer months following the peak of the nesting season. During July and August 58.3% of the Mourning Doves were tallied, but 72.6% of the season's kill came in these months. Peak hatch of pheasants usually occurred in June, but in July, August, and September only 9.6% of the year's count of live birds was recorded while

TABLE 2 - A Comparison of the Percentage of Highway Victims With That of the Living Individuals Seen Each Month Along Roadsides In Nebraska, 1941 Thru 1943.

| Month | Mourning Dove | | Pheasant | | Horned Lark | | Meadow Lark | |
|---------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|
| | Percent of Kill | Percent of Living | Percent of Kill | Percent of Living | Percent of Kill | Percent of Living | Percent of Kill | Percent of Living |
| January.... | | | 1.3 | 21.2 | .9 | 4.0 | | .2 |
| February.... | | | 1.5 | 14.9 | 2.7 | 27.0 | | .2 |
| March..... | | .01 | 5.2 | 12.2 | 18.3 | 22.2 | 2.1 | 2.5 |
| April..... | | 3.6 | 8.5 | 6.6 | 1.3 | 5.8 | 4.2 | 13.3 |
| May..... | 9.0 | 12.0 | 10.3 | 2.1 | 3.6 | 3.4 | 4.2 | 9.1 |
| June..... | 10.9 | 15.6 | 3.6 | 1.4 | 9.2 | 9.0 | 7.3 | 14.4 |
| July..... | 56.3 | 25.5 | 26.4 | 1.9 | 40.0 | 9.6 | 44.2 | 18.0 |
| August..... | 16.3 | 32.8 | 20.4 | 3.5 | 10.0 | 5.7 | 22.1 | 13.5 |
| September.... | 3.6 | 10.1 | 18.4 | 4.2 | 9.2 | 2.6 | 15.7 | 14.3 |
| October..... | 3.6 | .1 | 1.8 | 4.5 | 3.6 | 5.8 | 13.5 | |
| November..... | | | 2.0 | 7.4 | | 2.7 | | .5 |
| December..... | | | .3 | 20.0 | .9 | 1.7 | | .05 |

65.2% of the highway losses appeared then. The Horned Lark was an early nester and 24.3% of the total birds were seen in June, July, and August and during these months 59.2% of the highway losses were recorded. The situation was similar for the Meadowlark; 45.8% of the year's tally of living individuals were seen in July, August and September, but during these months 82% of the highway losses were noted.

Highway losses resulting from inexperienced animals as well as an increasing population was further borne out by a comparison of the monthly highway traffic and monthly losses. January travel was 76.7% of the yearly average and from this seasonal low the amount of travel increased to 123.5% of average in August. Highway losses showed a similar but more abrupt rise from a low in February of 17.5% of average to 241.0% of average in July. If highway kills were directly proportional to travel the losses would be expected to follow more closely the trend of traffic. Instead the losses rose precipitously with the appearance of inexperienced individuals, with a maximum July loss almost fourteen times as great as the February minimum, while August traffic was only 1.6 times as great as the minimum of January.

In 1942 there were approximately 101,000 miles of roads in Nebraska. Of these, sand or dirt roads made up 80.0%, concrete 1.2%, gravel 15.7%, and

black-top or macadam 2.6%. The road surfaces that I traveled were more nearly concrete 2.0%, gravel 44%, black-top 52.0% and dirt or sand 2.0%. Because of the reduced velocity of vehicles, only a small percentage of animals would be expected to be killed on sand or dirt roads. Conversely, mortality on concrete highways would be great because of high vehicle velocity. Both gravel and black-top surfaced roads were attractive to birds because of available grit.

For game birds and mammals, exclusive of rabbits, I recorded the road surface at the site of each kill. A total of 550 individuals of 17 game species were tallied in this way, and of these, 361 were pheasants. Six other species, Striped Skunk, Muskrat, Mourning Dove, Fox Squirrel, Spotted Skunk, and Sharp-tailed Grouse included more than ten individuals. The bulk of the Muskrats counted were killed at a small pond bordered by a concrete highway. Sharp-tailed Grouse live mainly in sandhill grasslands traversed only by sand, gravel and black-top surfaced roads and 71.7% were killed on black-top. If we eliminate these two species and make corrections as to the amount of driving that I made on each type of road we have the following correlation:

Relative mortality on:

| Species | Con- crete | Black- top | Gravel | Dirt or Sand |
|----------------------|---------------|---------------|--------|--------------------|
| Ring-necked Pheasant | 100 | 20 | 19 | 14 |
| Striped Skunk.... | 100 | 3.8 | 2.3 | 3.7 |
| Mourning Dove..... | 100 | 21 | 45 | 0 |
| Fox Squirrel..... | 100 | 7.3 | 11.5 | 0 |
| Spotted Skunk.... | 100 | 3 | 2.5 | 0 |

For each one per cent of the total mileage traveled over concrete roads 4.6% of the total pheasant kill was counted, whereas for each one per cent of travel on gravel roads .87% of the total pheasant kill was noted. Of the total mileage traveled, 16.3% of the game animals were found dead along concrete roads totaling 2.0% of the travel, 39.5% along the black-top making up 44% of the travel, 43.0% along gravel roads making up 52% of the travel, and 1.1% along the dirt roads making up 2.0% of the total travel. Apparently an animal crossing concrete had one-eighth the chance of survival as it would have had crossing other types of road surfaces.

As a matter of convenience soil types were divided into two major groups; sandhill or sand lands, mainly native prairie, an uncultivated grazing area; and hardlands or cultivated soils of less porous composition. Observations in the two areas were approximately equal in extent and from this it appeared that the more varied soils and land uses in the hardlands produced a larger number of game animals.

A total of 336 game animals were found dead in hard land soil areas and 175 in the sandhill areas. Two hundred pheasants were found in hard lands and 126 in the sandhills. Striped Skunks, Mourning Doves, Fox Squirrels, and Spotted Skunks were all more numerous in the cultivated areas than in the sandhills. The comparative figures were respectively: Striped Skunk 36 to 6,

Mourning Dove 30 to 5, Fox Squirrel 23 to 5, and Spotted Skunk 10 to 7. Sharp-tailed Grouse and Prairie Chickens were found dead only in the sandhill areas.

The use of highway mortalities as a tool indicating distribution and habitat usage of birds and mammals has potentialities. It may be considered a random sample of those species that cross open areas and a survey of highway kills can be conducted by observers untrained in other more involved methods of wildlife tallying.

The Nebraska data appeared to indicate certain conditions affecting the magnitude of highway losses. These may be expressed as follows: 1. Highway kill is inversely proportional to the experience of wildlife with fast moving vehicles. 2. Highway losses are directly proportional to wildlife populations adjacent to roads. 3. Highway losses are related to the habits of each wildlife species. 4. Highway losses are more closely related to the age composition and density of wildlife populations than to the amount of traffic. 5. Highway losses are directly proportional to the degree of road improvement; or thereby directly proportional to the speed of traffic. 6. Highway kills seem to be directly proportional to the interspersation of soil types. 7. Highway kills are directly proportional to the density of the adjoining cover.

Noon, and an odd plume-shaped cloud appeared on the western horizon. Three o'clock, and a pall of smoke settled over the hills, so thick that you could taste it. The terrible Brownlee prairie fire of 1943 was raging. Ranchers climbed to high hills peering westward through an eye-smarting haze fearful, but expecting to see a thin wall of flame sweeping toward them. They wanted to go help fight the fire, but its immensity appalled them and they feared for their own haylands and valuable stacks. Among these I, too, hesitated to go to the fire thinking that I might be needed more where I was. Fighters fought it for nearly twenty-four hours before finally snuffing it out. Those that had gone southwest of Valentine in the morning found themselves south of Ainsworth by midnight, over fifty miles from where they started. Tales were told of a hundred stacks blazing at once, of side fires creeping through the hills to sweep down other meadows, of a jackrabbit dashing afire from the flames and starting more infernos as he scurried across a meadow to drop dead.

1943 was one of those bad fire years which foresters and prairie folk fear. The Brownlee fire was the worst and most spectacular one of many. There was a bad fire in Lincoln County north of North Platte, still another northwest of Woodlake, more southwest of Valentine, and in one night four were blazing in Loup, Rock and Brown Counties. Carelessness, lightning and unknown were the causes of them. One blazed away after railroad men were not too cautious about burning the right-of-way. Another appeared to have started from a

[1942: The introduction of pheasants into central Nebraska, Outdoor Nebraska, 19. 1943: Further notes on aero-plankton of Kentucky, Ent. News, 54; Salamanders and snow. Ecology, 24; Ecology and Management of the mourning dove, *Zenaidura macroura* (Linn), in Cass County, Iowa. Iowa State College Research Bull. 310; Albino western meadowlark (*Sturnella magna*), The Auk.]

cigarette thrown from a car.

Each fire is different and demands different methods in fighting. Some burn with dense smoke, and others have a white smoke which is scarcely visible at a distance. When in the sandhills, one should make it a habit to watch the sky for smoke plumes.

It was a Saturday morning and I was working on the Valentine Refuge so busy with trapping pheasants that I failed to observe the sky. As I drove north toward Valentine, cars sped south. "What's up?" "A fire is headed northeast toward the refuge." "Get water tanks, shovels, and men!" Arriving at a ranch house, "How do we get in to the fire?" "Right across the hills. Southeast it is worse! There is a trail!" Topping a hill, we could see the flames rushing toward us and the road. Other cars were gathering. men lined out along the road starting fires with kerosene-soaked rags, others manned shovels and water guns. But, too late. Before the back fire was complete, we had to dash to our cars to save them. One wouldn't start so four men turned nozzles on it as flames roared over and past it. A sudden veering of the wind and flames had crossed our fire line and were savagely devouring their way up another hill. Man's efforts seemed so puny in the face of this wall of fire a half mile long! But we rushed ahead to try again. "Catch it this time as it tops a rise and starts down." "It's heading for that grazed area!" Over the hill it came, water sizzled, shovel blades flashed, and it was out! We looked about. More men were back firing in a meadow a quarter of a mile beneath us for safeguard against another outbreak. We left a man to watch still smoldering embers and went to help, feeling a strong sense of relief that the fire was out.

Suddenly a cry echoed over the meadow. Flames were leaping about the watcher we had left, and the monster was loose again. Trucks and cars surged across the meadow. Beyond this new break we could see billowing smoke of another head of fire to the south. Two or three miles on and again the trail crossed the path of the flames. We backfired with all our might, racing ahead as the flames turned northeast again. Five prairie chickens flew from in front of them. Smoke blinded us, heat forced us back, tears streamed, and the backfire had burned hardly a yard wide. Yucca popped with pistol-like reports, the prairie dragon roared with a deep angry voice and was upon us. And then it was out! As simply as that. The fire was out. Fifteen or twenty miles and thousands of acres of blackened countryside now lay smoldering.

All during the fight men had worked in perfect unison, no sounds were uttered, no swearing, no ordering about. Just work, shovel, fight, turn away, and shovel, work again. Never have I seen a more perfect example of team work among men.

After all were sure the fire was dead, we gathered together and the womenfolk appeared with steaming coffee and sandwiches. Men ate, drank, spent a few minutes discussing the fire, and then the group broke up. Some had come forty miles to help their neighbors in the struggle against a common enemy.

I loved Nebraska's sandhills where Golden Eagles feathered the skies and Sandhill Cranes heralded spring and fall migration with clarion calls. Where a tiny Spotted Skunk balanced on forefeet, tail raised made my horse circle it. Where prairie Chickens boomed in spring and survived the winter feeding on willow buds along streamsides. Where cattle sought the plum thickets to protect them from winter snows and Blue Grosbeaks sought the same thickets for their nests in summer. Where Dickcissels called from telephone lines and Upland Curlews glided on upright wings to isolated fence posts for their courtship calls. Where winter's leadened skies and snow left no horizons and salamanders sought thawing marshes even before the snow was gone.

Spring, summer, and fall were wonderful, but when I awakened and looked up from my cot to see frost patterns on the roof of my truck and where I had to walk beside Nuts to keep my feet from freezing, I hated winter. Three years of Nebraska winters made Lucy and me vow to never experience another.

[1943: Aspection in the biotic communities of the Churchill area, Manitoba, Ecological monographs; 13. 1944: Nest survival over winter. *The Auk*; 61, The effect of tree removal on a mourning dove population. *The Auk*; 61, Censusing pheasants by detonations. *Jour. Wildlife Mangt.*; 8, Mourning Dove management. *Jour. Wildlife Mangt.*; 8. 1945: Reaction of the mourning dove to colored eggs. *The Auk*; 62, Effects of a tornado on bird life. *The Auk*; 62, Comparison of census methods for pheasants in Nebraska. *Jour. Wildlife Mangt.*; 9, The pheasant in the sandhill region of Nebraska. *The Ring-necked Pheasant*, *Am Wildlife Instit.*; (Ward M. Sharp and H.E. McClure), Mourning Doves in Nebraska and the West. *The Auk*; 63. 1946: Phoebe in Central Nebraska. *The Auk*; 63.]

12. California



Came my "The President Greet You" letter and I was drafted into the Navy as a gob (11 May 1944). My years as a Scout leader put me in charge as a noncom of a company at boot camp in Great Lakes, Chicago. Forwarded to the Naval Hospital Corpsmen Unit and training in San Diego, we arrived at night, drew our bunks, and retired. Dawn was heralded by the soaring vocalization of White-handed Gibbons at the adjacent San Diego Zoo. I hurried out to listen,

only to stand transfixed as an Anna's Hummingbird bathed in a dewlet puddle on a leaf before me. Each liberty found me at the zoo where I met Bell Bencheley and some of her excellent staff.

My income was back at depression levels, six dollars every two weeks, which I used in sight seeing, and poor Lucy struggled on the rest of a gob's pay sent to her, and taught home economics at Ord High School.

A few weeks of Corpsman training at San Diego and I was transferred to Oak Knoll Hospital at Berkeley. Here I contacted the personnel officer in an effort to apply for officer rating. He demurred sending in the application because he knew nothing about me and offered me an enrollment at the School of Tropical Medicine on Treasure Island, which I accepted. Mopping the hospital halls, my co-workers as well as some of the patients kidded me by observing that a Ph.D made me a better mopper. One was a Commander who, through a patient in one of the private rooms, took an interest in me.

Engrossed in the six weeks of studies in tropical diseases, malaria, schistosomiasis, leishmaniasis, oriental sore, scrub typhus, trypanosomiasis, and examining stool specimens for offending protozoa, I glanced out a window and there walking before the building was the Commander. I rushed out and forgetting to salute, intercepted him. Would he put in a good word for me as a recommendation for my officer's application. "Of course."

The Marines have no medical corps and the Navy furnishes them with doctors and hospital corpsmen. Transferred to Camp Pendleton, the tremendous marine base in southern California, home of war games, tank corps, field training, and wintering grounds of countless Red-tailed Hawks. The unit's commanding officer called me aside as soon as my detachment arrived and I was standing before Lt. Col. John De Coursey, an entomologist cohort of University of Illinois days. He and I had set up a small house fumigating company of two employees, ourselves.

No great tents for fumigation then, rather we stuffed damp paper into all of the cracks around windows and doors and opened drawers and cabinets. Then, wearing gas masks, we broke open canisters of calcium cyanide strategically placed about the building, and hurried out into fresh air and sunshine. Next day we opened the house, removed the insulating papers and hoped that all of the roaches, fleas, bedbugs, or silverfish were dead. In midsummer this was extremely dangerous for we were sprayed with cyanide dust

as we opened the canisters and sweat could absorb it. Rushing from a house, I turned to see if John was also out. He was not! Readjusting my mask, I returned to find him staggering blindly in one room. Cyanide, like carbon monoxide, can prevent haemoglobin from absorbing oxygen and he was absorbing cyanide from his perspiration. I led him out and walked him around in the fresh air until he was rational again. The last time that I had seen him after he obtained his doctorate was in Springfield where he had a small insect control company. There he stood before me in resplendent officer's uniform with scrambled eggs on his cap, the same big, awkward lug whom I had enjoyed as a co-worker. He was embarrassed by my lack of rank and by military regulations that frowned on fraternization between officer and enlisted man. The impasse was solved when my orders came, returning me to Oakland and to San Bruno, holding base for overseas assignment.

In your future fumigation work when you have a new partner, always remember to get him in the right mood by asking him what kind of a coffin he prefers.

J. Don De Coursey

I had applied for the South Pacific (tropical experience in sight even if in warfare). We were issued carbines, gas masks, and other gear, packed and assembled by our cots. Returning from lunch, I found a note pinned to my pillow, "The personal officer wants to see you!" in poor handwriting. Knowing that my shipmates liked to tease me about my rank, I took it for a gag and ignored it. Crossing the camp street, I was hailed by the sergeant, "Had I gone to headquarters yet?"

At the personnel officer's desk, I saluted and said, "McClure reporting, Sir!" He looked at me non-plussed and then at papers on his desk. "Your commission has come through and I am to swear you in as a Lieutenant Junior Grade, but I don't know how to do it! Come back in an hour or so after I have had time to read up on it!"

Sworn in, my unit already assembled and marched off, now began a drama that happens only to the uninitiated. I had stepped from Seaman Second Class to Lieutenant jg in one step. I could no longer bunk in the enlisted men's quarters and they were gone anyway. Assembling my belongings in a dufflebag, I tried to return the gas mask, carbine and other equipment to the supply master, but he didn't know how to reclaim it. I had been issued an officer's uniform, but had to buy the hat and was assigned a bunk in the junior officer's quarters. Still in gob's uniform, I carried my dufflebag to the assigned bunk in a small dorm shared by three other officers. They watched me silently and then queried, "What officer is that for?" "Me!", and I walked out. I went to the barracks and asked for my liberty pass, but the sergeant said that I was not due for a liberty for several days. I assured him that I outranked him, displayed my new ID card, and obtained my pass even if he didn't believe. I needed a hair cut. Enlisted men's barbers were in one room and officer's barbers in another across the hall. I walked in and under the startled eyes of the barbers selected a chair. "Aren't you in the wrong room? You should be across the hall!" Enjoying all of this, I said, "No, I'm in the right place! I just

got commissioned!" Gathered around, they all viewed my rank and card, congratulated me, and gave me a good haircut free!

With my commission were orders that I should proceed to Washington to Bethesda Naval Hospital, but I was broke. I still had only the six dollars every two weeks which I occasionally augmented by being a pinsetter at a local bowling alley. It was a three-day train ride back to Washington and although I had the ticket, I was liable to miss some meals. Walking across the compound toward the gate for an evening in San Francisco, I saw a fallen wallet. In it was an address of a boy from Massachusetts, but no military cards, and \$25. I borrowed the \$25 which I repaid a year later!

The Key System crossed the great Bay Bridge and disgorged at a square where streetcars assembled from all parts of the city and around which were sailor traps, pinballs, juke boxes, curio shops, prostitutes, and tailor shops. I entered a tailor shop, unwrapped my new uniform and hat and asked the tailor to fit it for me and to sew on the stripes and insignia. Smiling, the tailor said that he had never helped a sailor advance from gob to officer! Be back in an hour and it would be done! Darkness was falling when I discarded my seamen's clothes, donned the beautifully tailored officer's uniform, squared the resplendent hat and strutted into the evening to the sound of laughter and applause.

During high school days in Seattle, I had a pal named George Bellman. He was a "flaming youth" of the times; a car with no muffler, squealing brakes, and a duck's head radiator ornament which would spit water when he slammed on the brakes. He braked quickly to cover the noise of his illegal cut-out and squirted hot water on the traffic policeman who was halting him! Later he broke off a front wheel while showing off his skill before the school. He and I had corresponded through the years and he was now a First Sergeant in the Marines, stationed in Frisco and he and his wife had a small apartment there. I often visited them. This evening I tood in the semi-darkness of the poorly lighted hall and knocked at his door. Opening it, he saw the uniform, came to attention, and said, "What is it, Sir? Oh, Hell!" We rejoiced at my change in rank.

Let's go back a few months. Assigned to Oak Knoll, we were permitted one weekend liberty out of the two. Came my first Sunday and I was out of the base and headed toward the San Francisco Zoo almost before daylight. It was a long trip, by train across the Bay, by streetcar through the Twin Peaks and to the end of the line, a few blocks from the zoo entrance. The zoo had not yet opened, birds were in the trees of the park, and I wandered off to watch them with my cheap binoculars. Ahead of me was another seaman, in Seabees uniform, with two boys. They too were watching the birds! We spoke, Fred Reuther, his teenaged son, Ronald, and younger boy, Lance. They were also waiting for the zoo to open! The zoo director, Carey Baldwin, was his brother-in-law, married to sister Linda, and I should come along with them for

breakfast. The fabulous Reuther family and the McClures have been associated ever since.

As soon as I met Fred, and later, Grace Reuther, they began showing me the country around San Francisco; Napa Valley, Mill Valley, Hooke's Ranch, Muir Woods. That Christmas was at their home in Vallejo! In January I was transferred to Camp Pendleton where some of my butterfly collection dates indicate that I went to the San Diego River Gorge (11 Feb 45). Back to the Bay area I was billeted in San Bruno with a unit of hospital corpsmen to await overseas transfer. As the above tale relates, I was sworn as a Lieutenant jg. at 10 A.M. on 14 March 1945. Sent to Bethesda for further training in tropical diseases, then back to Mare Island at Vallejo as the staff entomologist for the remainder of my tour of duty with discharge at Mare Island on April 10, 1946. Thus my "brilliant" Naval military career brought me to the Pacific and closer to my goal of tropical research.

A day or so after the ecdysis to officer I was entrained enroute to Washington. These were the hectic days when bus companies had signs reading "treat our bus drivers right, they are hard to get", and it was not uncommon to see irate drivers in fist fights with customers wanting to board overcrowded buses. Lucy met me part way and we enjoyed a single Pullman berth for a night.

At Washington I reported in at Bethesda and stayed with the De La Maters. I was supposed to be enrolled in the tropical medicine course, but when it was discovered that I had just completed it, they let me teach. Six weeks later orders sent me to Mare Island at Vallejo to be base entomologist. My duties were to keep the buildings and quarters free of mosquitoes, roaches, and other insect pests. So this was as far toward the tropics as I would get. DDT had just been discovered as a potent insect killer. I obtained some of the greasy crystalline powder and made a 10% solution in oil in order to test it. I was appalled! No insect survived even at much greater dilutions and cloth that I had dipped in a weak solution was still lethal more than a year later. History records what this did to our environment!

Lucy and the girls arrived and we rented a house (125 Ross Street) near that of the Reuthers and I took over the local Boy Scout Troop. As I have said, the Fred Reuther family included him, Grace, Ronald, Lance and there was a middle daughter, Hilda Phyllis. The Reuthers were a New Zealand family of German extraction which had emigrated to Florida. Fred was the oldest, then John who was a musician, playing and composing for the accordion. Next Walter, a PhD in horticulture, specializing in fruit culture, world famous and in demand for consultation in fruit problems the world over. And Roland who was a submarine commander. The baby of the lot, Linda, as you have seen, was married to Carey Baldwin. Fred was the only member without college degrees for during the depression he had worked in order to keep his brothers in college. Grace was a British girl. With such a brilliant family background, it was not surprising that Fred's kids were super. Ron, the eldest, was biologically

inclined and a brilliant worker. Like so many gifted children, school was a bore to him because it was no challenge. Like Bob Marks before him, he enjoyed being in the field with me and he was an excellent bird person.

The War wound down, we celebrated D-Day on Market Street, and all of a sudden the savage killing was over, stopped by the most massive killing of all, Hiroshima and Nagasaki.

At the University of California, Berkeley, I had met Bill Reeves and Bill Hammon, scientists and doctors who were studying Western Equine and St. Louis encephalitis virus infections in the San Joaquin valley, operating from a laboratory in Bakersfield on the hospital grounds. This was the George William Hooper Medical Foundation, a subsidiary of the University. Would Lucy and I go to Bakersfield to help in these studies, for birds seemed to be involved in the epidemiology of these diseases? It was April and Ron, bored with High School, took examinations in all of his classes and passed so that he could accompany me to Bakersfield.

Housing was at a premium and we finally rented a cabin owned by a lawyer. It was situated on the north side of the Kern River adjacent to the Kern County Park in a five-acre pasture and was modern in that there was a water pump operated by a dyspeptic gasoline motor that filled a tank above a tower, which provided for a shower below and water in the house, and Ron could sleep in a little room beneath the tank which usually did not leak, and the tree-lined river was a constant source of swimming pleasure.

Having found a place to live, Lucy who was staying with Grace, could join us, only with five youngsters they developed serial measles, first one and then another, until many weeks had passed before she, Jeannette, Cam and Lance could join us.

We still had Mike and Flutter, two of the Mourning Doves that had been part of our studies in Lewis. I built hanging cages for them for there were feral cats, raccoons and other predators from which they needed protection. They continued to mate and raise young each year. When we moved into Bakersfield, I was permitted to build a large aviary at the lab to house them and other birds that I acquired. Gradually we accumulated, Katey the burro, two dogs, an unspecified number of bantam chickens, and the sheriff's peacocks which visited us regularly from his place up the river.

It was a trying time for Lucy. We divided the one room cabin into compartments by means of curtains so as to have privacy for the various members of the family. They lived most of the time down by the river, but we usually had supper in the sectioned off dining room. The lawyer's hobby was to try to keep his motorized pump running, but it was a source of irritation to us when the tank emptied. Outdoor living was wonderful for the kids: all summer and fall, and no one was drowned.

Jeannette began first grade in a nearby country school, we moved to an apartment in town, and eventually bought a two-bedroom frame house (481 Poplar Street) in a housing development on the north side of the city, for \$10,000. There I dragged in an old shed (much to Lucy's irate consternation) and equipped it as an aviary. We built a small pond and peopled it with goldfish which the local children promptly stole (but some came back) and put

up a swing and trapeze for the girls. It was a popular place and center of activity for most of the neighborhood children. We had our pets here, too. This time cats, a Scotty dog, and a rabbit. The rabbit urinated under the davenport which soaked through wiring to a lamp, shorted out, and set the place on fire early one morning. Fortunately I was awakened by the noise of the sparking and extinguished the fire before there was much damage. We had both Lance and Ron with us each summer.

After Nebraska, the nearest we got to owning a horse was a tiny burro colt named Katey which I bought for Jeannette and Cam while we lived in the cabin along the Kern River. She was another little character and knew her own mind. She did not like Bill Pogue, a high school student who loved birds and who came to work with me nearly everyday. He would stand outside of the fence surrounding our small pasture to see where Katey was. Then try to outrun her to the house where he would burst through the kitchen door with Katey sliding, biting and kicking right behind him. Poor Katey and Bill both came to tragic ends. She died of distemper when we sold her and moved to the city and 35 years later, Bill, a graduate game biologist in his own right, continuing in the work with nature that he loved, was murdered by a deer poacher in the mountains of Idaho.

I like the story about the farmer who owned a balky mule. Usually the mule was obedient and a good worker, but occasionally when the farmer would climb up to the seat, take the reins and cluck to the mule, it would lay its ears back and tell him to go to hell. No amount of thrashing or cussing would budge the stubborn creature. One day in exasperation, he tried psychology. He stopped swearing suddenly and peering down at her feet cried, "What the hell?" Then he climbed down, reached for and picked up one of the mule's feet while he continued to examine it and to talk about it. The mule began worrying about her foot while the farmer clambered back up to the seat. Shaking out the reins, he said "giddap!" and the mule forgot its balk and obeyed. It had a short memory and never failed to react to this subterfuge.

There were many aspects of the relationships between birds and the encephalitis viruses known as arbor viruses (arthropod borne virus) and our studies gradually grew into a lifetime effort. Ron and I began a study of the avifauna of the area, bringing in birds for the lab staff to test for viruses or antibodies. To be comprehensible, I must explain that these are summer infections that are transmitted by mosquitoes. Some questions that were being pondered and explored were: What mosquitoes carried the virus in their bodies? What birds and mammals were susceptible to these infections? Did infection in the mother produce antibodies that protected young birds and mammals? What were the manifestations of viremia in a bird and how long did they last? How far could a migrating bird disperse the virus, if viremic? Could a viremic bird migrate? What mosquito species bit what birds? Were they different from those biting mammals and man? How did man get into the epidemiological picture? And most difficult of all, since this was a summer

complaint, how did the virus survive the winter and where? The researchers had their work cut out for them!

Ron and I climbed trees and looked into nests, hundreds of them. We banded the nestlings and trapped and banded adults by the thousands, 10,000 of them in three years. We worked farm yards, orchards, the riparian environments along the river, and we studied in parks and city.

One of the most impressive ecosystems in the valley was a great olive grove a few miles north of Bakersfield. It covered a hundred acres and supported 2500 trees, nearly every one of which "wore a nest of birds in its hair", most a small brown finch, the Linnet or House Finch, but many robins and doves as well. I described this productive habitat through the eyes of a Mourning Dove in the following: (from Whistling Wings).

It was here in Los Angeles that Mac had begun to hear about a wonderful nesting place beyond the mountains to the north. It was an olive grove so large that there were thousands of trees and it was near both water and food; and it was tenement of species. He had first heard of this place from a bird at San Diego who had been raised there but now had his family land along the Salton Sea to the east.

Mac wondered about this place and its importance as a bird haven. He learned that it was so crowded only resident pairs returned to it year after year and new pairs could enter only when there was a vacancy. He spoke of this to Huelota who assured him that it was where they were going and then she told him that her previous mate had been shot just outside of the grove. She hoped that he, Mac, could carve out a holding for them. During their flight over the mountains, he met with other doves who had originated in the Olive Grove but were now living in other parts of the state; some as far north as Ukiah, two to the east at Lake Isabella and in San Bernardino County, and one lived only five miles west of the Grove near Shafter. But he also learned that in the fall the serenity of the Olive Grove was broken by hunters descending upon it to kill many doves before they could migrate, even leaving nestlings to die without parents.

They arrived at the Grove late in March to find the place teeming with activity. Mac selected a spreading olive toward the northern edge as his singing post and thereby began a daily singing and wing slapping battle to retain his priority. The Grove included 62 rows of 40 large crowned olives, averaging 60 centimeters in trunk diameter. The low flat entwining limbs were ideal nesting sites. To the east, a bulrush filled irrigation ditch provided water and beyond it was pasture land; grape arbors to the south and croplands to the west and

[1948: Factors in winter starvation of pheasants. Jour. Wildlife Mangt., 12. 1949: The eyeworm, *Oxyspirura petrowi*, in Nebraska pheasants. Jour. Wildlife Mangt., 13. 1950: An eleven year summary of mourning dove observations in the West. Annals of the 15th Wildlife Conference. 1951: An analysis of animal victims on Nebraska's Highways. Jour. Wildlife Mangt., 15. 1952: The changing picture of Encephalitis in the Yakima Valley, Washington. Jour. Infectious Diseases, 90. (W. C. Reeves, W. McD. Hammon, A. S. Lazarus, B. Brookman, H. E. McClure, and W. H. Doetschman)].

north provided abundant weed seeds and insects for the hosts that came to roost or nest. It was especially attractive to House Finches until by mid-spring, nearly everyone of the more than 2,500 trees now had or had supported a nest. They were of little concern to Mac and Huelota even though they, too, were seed eaters. The House Finches picked up and cracked smaller seeds which they fed as a gruel to their youngsters. The doves swallowed larger seeds without cracking them, having a gizzard to perform this chore. And they fed small youngsters pigeon milk as well as the moistened seeds. Many males selected unused House Finch nests as foundations for their own and the resulting stability resulted in more fully fledged young.

By early May, House Finch activity was at its peak with at least 800 nests of eggs or babies, and there were 150 dove nests as well. Mac, of course, did not count all of them; he was too busy defending his holdings and helping Huelota with a pair of healthy youngsters. To his surprise, the same man that had banded his father in Iowa came to band his family here in the Grove. His associates in the grove also included the families of 90 pairs of Bullock Orioles, 30 pairs of Black-Crowned Night Herons, 12 Robins and 10 House Sparrows. During June, many of the House Finches completed their family duties, but 330 nests remained active while dove pairs continued to pour in and now there were 535 nests in the grove. In late August, just prior to the opening of the September hunting season, still 77 dove families were present.

Nesting at the Olive Grove was fun. Mourning Doves are solitary nesters but often nest closely in a favored location. So was it here. Hundreds of pairs were using these wonderful resources. Mac and Huelota were raising family after family and Mac enjoyed his surroundings. In cities and at farmyards, a nest site was often located so as to offer little to see, and sitting on eggs or young could be boring, but here there was continuous action.

From his nest high in the Olive, Mac could watch the happenings in three House Finch nests beneath him. The nest to his north had been that of a robin. Only the foundation of last year's nest was still present when the finches found it. They rapidly built their sturdy, but somewhat unkempt nest upon it. The bright red male was more of a nuisance than a help for his dull-colored, but ambitious wife, who laid egg after egg until there was a clutch of five. These she assiduously incubated and four tiny balls of fluff eventually hatched. Now the male, who had done little more than sing or accompany her to her feeding ground where he pestered her with love making, joined in feeding the nestlings. This was an interesting process to Mac. He swallowed seeds whole and regurgitated them plus pigeon milk into the throats of his babies. The finches collected smaller seeds, each of which was carefully husked and the kernel swallowed. When back at the nest, these broken kernels, with digestive juices from the crop, were pumped into their babies. A similar action but a different food!

These nestlings were as naked as Mac's newly hatched, except for sparse long cottony down. Since the youngsters remained in the nest less than two weeks, this down was quickly replaced by mottled brown feathers. Getting these noisy and husky babies out of the nest for their first flight was tedious and amusing to Mac as he watched.

To the south was another House Finch home and Mac had only to turn around to watch it. They had built in a fork of twigs and everything progressed normally until one morning there was much scolding and loud yelling. Mac opened his eyes to see what was the matter, and there below him, a large black bird, or was it a dark gray brown, was at the nest. Both finches were screaming and flying at it. A Cowbird female, it ignored this raucous objection and ate two of the eggs. Then it turned and laid a bright bluish egg in the nest and flew on as the male finch dashed at her. The male continued to follow the Cowbird to the edge of his territory, but the female returned to the eggs. She nestled upon them, but they didn't feel right, the cowbird egg was too big. It was late, and as darkness approached, the nesting still did not feel right, so she gave up and went to roost alone. Next morning, she was back at the nest, having come to an agreement with her mate about this, she began covering the eggs. They brought new material and she built another floor to the nest covering both her eggs and that of the Cowbird. This was a strategy often used by House Finches to thwart the Cowbird. In coming days she laid four more eggs and they raised four young happily. The man who put rings on birds banded them and later examined the nest to find the double floor and the unhatched Brown-headed Cowbird egg.

However, this strategy was lacking in the beautiful Lark Sparrow. Mac could see the nest of this species on the ground at the base of a nearby olive. The nest was artfully woven of plant fibers lined with horsehair and decorated on the outside with drying flowers of several plants. Here, he saw the Cowbird drive away the Sparrow, exposing its three lovely spotted eggs of grayish blue. She removed one egg and deposited her own. Later the Cowbird and one Lark hatched, but only the Cowbird survived.

So the daily pageantry of life was all around Mac. As August slowly wore away, he began to hear comments among the doves drinking at the canal or feeding near it. "Finish! and get out of here!" "The dangerous times begin soon when men come with guns to the canal and grove." "Leave, get out of here!" Except for laggards (or late at nesting), all of the species except the doves had finished their breeding, but the doves were designed for a long breeding season. Many had moved on as they fledged their most recent young, but there were still 77 nests in the grove as September 1 broke with a beautiful clear sunrise.

Mac and Huelota had just hatched their fifth brood. The bright Sunday morning was suddenly shattered by a gunfire from all sides and Huelota, who had been dozing nearby, jumped up and fled. She had been through this before and the only survival was to seek the desert where you could see men approaching or find secret small water holes. Mac had just fed his youngsters and crouched over them in terror. Some boys with light rifles or shot guns wandered through the grove shooting down the nests, but they did not see Mac who was high in the tree. The bird bander came to the grove the next morning to walk slowly through it, grieving at the slaughter; a Kestrel, a Vulture, a Robin, feathers of doves, dead adults or youngsters in the nests.

Mac rode out the whole day watching the uproar around him. It slackened off at sundown and he began to look for Huelota. She did not return. He fed

the squirming nestlings, but he was a male and males were not programmed to care for nestlings at night. In confusion, he responded to his old habits, left the nest, and roosted alone at his sleeping place in a nearby Eucalyptus. The following dawn he returned to the nest to find the youngsters cold and barely alive. He brooded and worked with them all day, but the younger was dead by sundown. Again, he could not spend the night at the nest, and on the second morning, found the older bird succumbed. He worked with both, but there was no response and an approaching gunshot explosion sent him away.

With no Huelota and no late juveniles to train, Mac joined the loose flocks flying south, dodging occasional hunters, on and on, back to Jalisco.

Winter passed, the sun climbed back into the northern hemisphere, and Mac returned to California. At the Olive Grove he was surprised to find Huelota already arrived. "Yes, she had escaped the hunters," she said. Year after year, they returned to raise families.

That was forty years ago and the opening day of Dove season was September first, the same as it is now, in spite of the fact that my research and that of numerous other biologists have shown that doves are still nesting on that date. I suppose that the biologist should not cry over the spilled milk of mismanagement of any natural resource, for this wonderful productive grove, both productive in olives and wildlife has long since become a macadam parking lot.

But that is beyond my story. Came September 1st and on this opening day there were still fifty dove nests in the orchard that contained eggs or young. I could not bear the carnage, but on the morning following, I checked the trees to see what was left. Beside the cold eggs and starving babies, I found one or two dead robins. A hunter moving through the grove might mistake a robin for a dove flying among the trees. And there was a dead Kestrel! This could have been mistaken for a dove since it flies rapidly, but knowing how most hunters dislike hawks, I suspect that it was a deliberate kill. But there was also a dead Turkey Vulture! My opinion of this is that if a hunter cannot distinguish a Mourning Dove from a Turkey Vulture, then he is dangerous and should not be permitted to carry a gun.

One spring day I noticed a group of children who were of school age and belonged to itinerant grape pickers. They were playing hooky from school and were walking through the grove carrying long sticks with which they were knocking down each nest that they could see, breaking the eggs or trampling the young. I angled toward them so that I would intercept them without frightening them away. When I reached them, I began talking about the birds. How God made all creatures, how the mother birds loved their babies, how birds had a right to live the same as we do, and on. All of the propaganda to make them realize that they shouldn't be doing this and with a reason.

As I talked one by one, they looked disgusted and drifted away, back to the grape arbors. Finally only one remained to listen to me. I thought, "Now if I can convince even this one child my day is a success!" When I paused to

catch my breath, the boy remaining looked up and interjected this, "You know, you sound just like my brother and he's a Christian!" And turned away!

In our exploring, Ron and I had learned of another bird bander who lived in the mountains to the north of the city. By trial and error, we found her place; over hill and dale and through many fences until we saw a low cottage nestled in a tiny valley beneath great oak trees and encircled with arbors and shrubs. It was Lumreau where Edna Williams, a septuagenarian, and her husband, Will, spent most of the months each year. Their small ranch and quarters were several miles away near the main road.

Edna welcomed us and plied us with drinks and cookies. Will was bedridden, dying of tuberculosis. This concerned Ron for he was afraid of contracting the disease, but Edna assured him that there was little possibility of this. Not only did she have feeders and traps out where she could capture and band birds, but she catered to the hummingbirds which came in scintillating droves to the many feeders suspended from the arbors. From this initial introduction sprang a deep friendship that lasted the rest of her long life and gladdened our years. The girls, Lucy and I loved to go to Aunt Edna's either at Lumreau or at the home place.

We had not been at the cabin by the river long before I made the acquaintance of a pet shop owner. The traffic in tropical birds was even worse then than it is now! He obtained some beautiful little tanagers and two Troupials from South America. Soon after receiving the shipment, the owner went on a two-week holiday leaving his shop in the hands of an assistant. As he was unaware of their proper care, the Tanagers quickly starved to death. Upon visiting the shop, I found one Troupial dead and the other starving on a diet of oranges. I said, "Give me that bird! It is going to die! If it dies, too bad, but if it lives I'll pay your boss for it."

This was a Venezuelan Oriole, also known as a Troupial (*Icterus icterus*), one of the first of the beautiful new world orioles seen and described by the Swedish biologist Linnaeus in 1757: birds probably brought as skins back to Europe by early explorers. Troupial, as we named him, could barely stand, was about featherless and filthy dirty, but he had the look in eye of a fighter and survivor. I put him in a cage by the river. Another of his great tribe of orioles, the Bullock's Oriole (*Icterus bullocki*) is a migrant from South America, come to southern California to raise families each summer. The County Park nearby had many of them and Ron and I had first caught them by quickly covering trash cans in which they were seeking watermelon or other fresh fruit remains. By experiment we found many foods attractive to them and used as bait in traps in order to further catch and band them.

Using this information I put bread, watermelon, banana, and other foods in the cage. Troupial staggered over and began eating soft bread, nearly a

whole slice. It's a wonder it didn't kill him, but it didn't, and after a drink of watermelon juice he heaved a sigh, crawled upon a perch and went to sleep. Next day he was trying to preen, bathed, and made an effort to clean himself up a little. In a few weeks he had completely recovered and now I found that I had a remarkable pet.

I no longer had time to work with a Boy Scout troop, but I could lecture to troops, schools, church groups and service clubs. To do this, I assembled a number of birds as living exhibits and prepared small exhibit cages for them. They were adequately housed in the aviary, but on exhibit I had two boxes each of which held six cages, so that I could show and lecture with 12 different species. This made a popular talk and I was in demand at clubs and groups.

The Troupial was the star of this show! He had an originality and inventiveness as well as a complete awareness of his surrounding, of timing and a basic understanding as well. His intelligence amazed even those who denied that birds could think as well as observe. Finger tamed and with complete confidence in me, he responded to ideas and situations. I made a small performing perch for him from which he would pull up a small bucket made of a thimble and remove a bit of biscuit that he liked. If he conceived a trick or action he would continue to do it on cue and he was an absolute ham before an audience. After showing and discussing the other birds, I would bring him out. Large and a colorful black and yellow with blue flesh around the eyes, he would bring oohs and aahs from the audience. As they clapped for his little tricks, he would stand on tiptoes and whistle back at them. Children and adults loved him and as the uproar increased so would his prancing and whistling. If he flew from the podium, he would quickly return and he ended his performance with a finale of his own. I would tell him to return to his cage, but he would walk away and ignore me. In mock annoyance, I would scold him, finally beating on the table and yelling at him, upon which he would fly to my head, give me several hard pecks (often drawing blood), fly down and enter his cage.

One evening when we returned to the aviary from a performance he was startled from my hand and flew into a tree in the darkness. At dawn the next morning I returned to the aviary and looked into the trees where he had disappeared the night before. I wasn't sure of his location until he whistled at me and when I held a small moth up, he flew down to my hand for it and returned to the aviary.

Troupial could open any lock or catch that wasn't definitely padlocked or snapped. Orioles of the new world belong to a new world family, the Icteridae, which includes Red-winged Blackbirds, Northern Orioles, Grackles and other familiar species as well as the orpendulas familiar in South America. Most are omnivores, eating insects, fruit and seeds. The family, especially the fruit eaters evolved a special musculature of the jaws which permits the bill be opened with considerable force. This enables them to drive their sharp bills through the skin of a fruit and then force open the hole crushing surrounding pulp and allowing them to lap up the resulting liquid. With this equipment Troup could lift a cage door and step out, or if the door was swung on hinges to push it open. This ability permitted him to come and go from his cage at will.

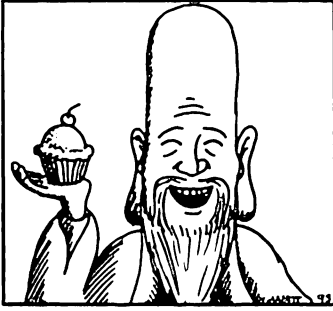
When in Japan I bought a beautiful wooden cage for him, built like a Japanese Inn with several gates and doors. These were secured by small screen door hooks. Now we learned how effectively he could observe and think. Trapped in the cage, he watched me unhook a hook to let him out. It took him only twice or three times watching me lift a hook to walk to a door, squeeze his bill through and grasp a hook, then raise his head to unlatch it. After that, hooks were no more problem to him than sliding doors.

This was in the days before aerial spraying of potent insecticides had reduced California's spectacular insect fauna to the remnants that we see today. On summer evenings many moths, crickets, beetles and small insects would gather around lights and in Bakersfield lighted shop windows attracted vast numbers. Since Troup was an insectivore as well as a fruit eater, it was easy to supply his needs. I would simply drive to town to a window display such as that of a car sales and release him to walk along the sill selecting his favorites and stuffing himself. He was especially fond of black garden crickets and some kinds of moths.

When Ron and I went to Japan, I left Troupial in the care of Edna. Some of the other pet birds were left with laboratory assistants. More than a year later, I returned and when Edna opened the door of her ranch house he heard my voice. Even in another part of the house he recognized me and began greeting me with a cacophony of whistles and calls. Of the old Mourning Doves from Iowa Flutter had died, but her mate Mike was still alive. I took the two birds with me back to Japan where Troupial was the guardian and master of my lab and Mike had a comfortable cage in an aviary at Hama Park, where he died quietly at the age of 15 years. Flutter had lived to be 13.

The Troupial had many likes and dislikes among people, some he would love, others he attacked. I was never sure that it was dislike or more the fun of dominance, for people who feared him would run with him in hot pursuit. He seemed to take great delight in intimidating Watanuki, my driver, who would flee every time he saw Troupial free from his house. One day this almost did Troupial in for as Watanuki ran down the hall from the lab slamming the door he caught Troup who had reached the door above him, crushing off the middle toe of his right foot. Troup was right-handed and although the wound healed, it greatly inhibited his feeding for he held food or prey down with his right foot. I think that this contributed to his decline in some way, for within a year he became very weak and arthritic, having trouble standing. He passed on after an exciting and eventful life, at 12 years.

13. Boy Scouts



Seattle Boy Scout Troop 25 met in a fishermen's shed at the foot of 24th Street North and by the edge of Union Bay. I joined, as was proper, at the age of 13, struggled up to Second Class and was patrol leader of the Wombat Patrol.

A decade later I met a small group of boys whose meeting place was a block house constructed for them by their fathers in a piece of woodland at the eastern outskirts of Danville.

They needed a scoutmaster and had seen me at a Community Center. Would I help them? It was Troop 6, I believe. We began taking hikes, getting into the meat of scouting and more boys joined. It was a going activity when I left for more college.

Five more years passed and we were in Lewis working with Frank Berry, one of nature's noblemen. He was a deluxe automobile repairman, lathe operator expert, designer, and an ardent naturalist and conservationist. Among his hobbies was collecting guns. There were many youngsters in Lewis and they admired Frank and learned from him, as I did. We organized a Scout Troop, he as scoutmaster and I as assistant. He ran a memorable troop for many years.

Further west in Ord the town supported one Troop and the Troop Committee made up of the boy's fathers asked me to take it over. By that time, we had two young daughters, but no sons and I loved boys as well. The city had provided the Troop with quarters on the second floor of an old city building. A Scout Troop is usually made up of four 8-man patrols with four Patrol Leaders, a Senior Patrol Leader, Assistant Scoutmaster and Scoutmaster. Other offices or positions were filled from the boys' ranks.

It was wartime with almost infinite opportunities to direct the energies of teenaged boys into fascinating projects. The weekly meetings became explosions of noise and energy and directed efforts as well. No other fathers wanted the challenge, so the Troop grew to double its prescribed size, more than sixty boys. Everything was needed for the war effort. Collect paper; that we did! Every month with my Ford Panel truck (shades of High School) we made the rounds of the city collecting accumulated paper and magazines. One marvels at the mass of newsprint and magazines that pour into every home. An agent from Quaker Oats Company in Ohio contracted to buy our store of paper by carload lots. It would take us only a few weeks to fill a box car put on a rail sliding for us.

They needed scrap iron and we scoured the countryside. Old cars, farm machinery, even an old steam driven threshing machine piled before us, again more than a railroad car load. And aluminum! Every housewife and shopkeeper found some unused aluminum pot or pan and there was a pile readily saleable. Yes, tires too! The pile in our front yard grew and grew until we had more than 1500 of the ragged smelly things, but here the spell broke. Money for paper continued to pour in, and the iron and the aluminum, but in

the last effort no one really wanted old tires. Lucy's enduring patience began to wear thin! When were we going to get rid of that mountain of old rubber? In the smoke of activity, I can't remember who did!

My Assistant Scoutmaster was a young man who liked firearms as had Frank Berry and did as had Frank, taught the boys the ethics of firearm use. At the northern edge of Nebraska near Niobrara was the Niobrara Wildlife Refuge for bison and other mammals. Though extensive, it was of limited acreage such that the buffalo herd had to be thinned each year. As the older bulls were supplanted by stronger and more pugnacious younger ones, these whipped-out loners were the ones to go. Each year a drawing was set up for people who wished to have the meat of these culled animals. Indians of South Dakota were given first choice, but others could bid as well. The Assistant Scoutmaster and I bid for one, the fee was \$150.

And we got it: 1500 pounds of buffalo which dressed out to 400 pounds of meat apiece. Beef was high-priced and about to be rationed, and all that good meat for \$75. A local butcher carved and wrapped it and we stored it in cold storage. I was acquainted with furriers and trappers who hung carcasses of their take on cabin walls to freeze during the severe winters. Lucy was an excellent cook, so our protein included possum, muskrat, raccoon, and bison. Twice during the year we had a buffalo feed for our sixty boys who wolfed down the tender steaks, and still there was more in the freezer. And muskrat is a delicacy!

For a Scout Troop to be successful it must have a goal or tradition. The Ord Troop's tradition was accomplishment and as long as there were challenges and patriotic needs it thrived.

I received my "The President Greets You" letter in 1944 and we moved further west to be stationed at Mare Island Naval Base in Vallejo, California. There was a lack-luster Troop there in need of a leader as well. The boys responded and the Troop grew, but my period of service was short and Lucy and I moved on. In Bakersfield I did not have time to devote to a Troop, but did work with individual boys.

Finally at Washington Heights, U. S. Army housing area in Tokyo, Japan, Troop 1 was a real fun activity. We thought that we were the first Troop among U. S. Military facilities, hence as No. 1 we had a position to maintain. Again activities, camping, boating, cave exploring, camporees, and other accomplishments attracted more and more boys until the Troop was approaching double size. Troop Committeemen became concerned, enlisted other fathers and split us into Troop 1 and Troop 2. The gauntlet had been dropped and competition raged. Both Troops were on the run! And along came reorganization! Boy Scouts of America had Troops at other military bases and units in the Far East, so the Far East District was created and in so doing, they found that a Troop in Okinawa had precedence of a few weeks in organization and registration. It was, therefore, No. 1 and we were relegated to Troop 11 in the new numbering. The boys were aghast! They would have none of it and razzing by Troop 2 did not help matters. No, we were not Troop 11, we were Troop 1 twice, that is Troop 1-1, or Troop One-one. Just let some unacquainted official at a camp or event announce Troop 11 and the

heavens rocked with roars "Troop 1-1" with cheers and stamping of feet. Now we had a tradition that was unbeatable!

Along came a young Assistant Scoutmaster, Pete Richter, young enough, with no generation gap, to understand boys and their imaginations. For hikes, Tokyo's weather was unpredictable except that you could expect rain. It failed to rain and an overnight hike in the mountains near Tokyo was a success in the fine weather. Back at the next Troop meeting when we were sorting out lost and found items, the boys talked about the hike and Pete said that the answer was simple. He had a little Japanese elf named Suzuki, who rode on his shoulders on hikes. If he was happy and well-fed we would continue to have good weather for hikes and other outdoor activities. The boys caught on and thereafter as we assembled for each hike or trip they plied Pete with sandwiches, cake, drinks or other goodies all for Suzuki. Amazingly we went for months without bad weather on field trips!

In the pantheon of Japanese folklore there is a "Happy God" named Fukurokuju. He is usually shown with a high crown, holding a peach and accompanied by a deer and is considered as a god of wisdom and goodwill. Pottery figures of Fukurokuju that nodded his head and waved to you were in the shops. I purchased one and brought it to Scout meeting announcing that he was Suzuki. Every meeting night he was on the Scoutmaster's desk nodding and waving to the boys and each hike his spirit rode with Pete. In fact, now 35 years later he sits on a shelf nearby where he can watch and wave at me.

For a year or so, Troop 1-1 had a very strong assistant Scoutmaster, but he had a son who was normal but not overly bright. The strong-willed father insisted that his son be a patrol leader and later senior patrol leader. So he was assigned as the patrol leader of the Flaming Arrow Patrol. The rest of the kids in the patrol were good kids, but they couldn't resist taking advantage of their slow-witted leader. The patrol was in and out of everything. At times they were the Troop's shining examples and at others the despair of the Scoutmaster. I never knew what to expect of them, but usually feared the worst. It was on a weekend hike to a wooded area near Tokyo. Small candle-lit fireproof folding lanterns were available at sporting goods shops and most of the boys had them, for unprotected lighted candles were prohibited inside tents. The campfire-side activities were over, but pup tent activities had begun. Flaming Arrow Patrol had rigged their pup tents so that all could sleep under one roof. The camp noises had settled down to a gentle rumble and I had dropped off to sleep convinced that all was calm when someone screamed "Fire!" The Flaming Arrow's tent was a mass of fire, boys scrambled out in all directions, the fire was quickly beat out and no one was singed. Forever afterward the patrol was known as the "Flaming Teepee Patrol"!

With 35 or 40 active boys, Scoutmasters always live under a shadow of possible injuries. Nowadays threats of suits or high costs of insurance have greatly restricted many Troops' activities, but we had no such worries and remarkably we had but few injuries. One youngster forgot to puncture a can of chocolate milk when he put it into a fire to warm. The resulting explosion damaged his tent and burned his face a little.

Near Kamakura was a large abandoned quarry with immense corridors and rooms. We explored it with two strict rules, don't shine your flashlights in another eyes, and don't run; neither of which is easily enforced. Patrols scattered out and soon one was leading a member back with a great knot on his head. Extinguishing his light he had turned to run down a dark corridor and collided with a stone overhang. Cold water eased his lump and running stopped.

Up near Mt. Asama was an old abandoned hotel. It was a mile or so from camp and we explored it. It was a hazardous place to be in with creaking floors, swaying staircases and unfinished scaffolding, but the boys loved it. Back at camp I said that once was enough. Some of the boys begged Pete to take them back and while I was off with others he did so. A couple of hours later I was found by an excited messenger. One of the boys had fallen two floors from the scaffolding and broken his leg. We notified headquarters and made him comfortable and he was the envy of the Troop for a helicopter ambulance was sent to take him back to the hospital in Tokyo.

Here in Japan it was traditional not to waste. We saved tin cans which went to factories to be turned into toys. Washington Heights trash and garbage was collected and delivered to an old ladies' home and they in turn sorted it, moist garbage fed pigs, paper packed and sold, cans selected and sent to factories, bottles, everything made use of. When we visited the home, we found it neat and clean, housing I don't know how many supposedly destitute elderly women who proudly told how they supported themselves and had funds left over to give to charity.

So Troop 1-1 collected papers and magazines once each month making use of large army trucks (6-bys as they were called). With some assistants I remained in the truck sorting newspapers, magazines, Sears Roebuck or Montgomery Ward catalogues which the boys brought. Loading the magazines bundled by name and paper quality into my car, I took them to the Kanda book district of second hand book shops. Shopkeepers happily bought them, paying me high prices for such journals as Ladies Home Journal, Vogue, Better Housekeeping, etc., for Japanese girls wanted them to keep up with styles and trends, and the catalogues went as high as a dollar apiece.

A day's paper drive often netted as much as fifty dollars in magazine sales and that was not all. The truckload of newspapers went to a junk dealer that I had found and who would take all that we could bring. He paid top prices, more than a penny per pound. The Troop was rich! We had a treasury bank account in the hundreds of dollars. Having access to Army surplus we obtained pup tents for all, camping equipment, cooking utensils, binoculars and on and on.

One meeting night a pair of youthful Japanese Boy Scouts came into our clubhouse and asked to speak to me. They were the Senior Patrol Leader John Matsuoka of the St. Paul University sponsored Scout Troop and his sidekick Peter Endo. John was the spokesman! He had an idea that it would be fun for his Troop and Troop 1-1 to get together for games and eats. Regularly or irregularly, the two troops met at St. Paul's or in Washington Heights, or on joint camping trips. The nationalities were never pitted Japanese against

Americans, and the boys loved it. Contests were contests for the winning, not to prove racial or cultural superiority. Parents on both sides approved and we had good parental turnout at such joint occasions.

John and Peter graduated from High School and entered College and girls entered their lives, but not long before that, they and some of their friends began joining me in a periodic get-together for food, laughs, the practicing of English and Japanese and for good fellowship. Gradually this eating and conversation society grew to six boys and four girls in regular attendance.

A friend gave me a small turtle carved from mother of pearl which she had purchased in Enoshima. I had it mounted in silver and made into a lapel pin. John asked me what society it represented, to which I replied that it was the emblem of the Urashimotaro Society. Urashimotaro is featured in a folk tale (Oriental Rip Van Winkle) in which he as a boy rode into the sea on the back of a turtle to the turtle's underwater kingdom where Urashimotaro married a beautiful princess. When he wished to return to his home, the turtle brought him to the beach and as it returned to the sea he found that he was a very old man. So we dubbed our group the Urashimotaro Society. Our motive was simple, now and then to spend a happy evening together. Our rules were even simpler.

None was rich so we always went "dutch". Each meeting was at someone's home or at an inn where we shared the costs and each party was no burden on anyone. Why was this so important? Japanese etiquette prescribes that one should always make a guest more than comfortable; feted would be a better word. Gifts are given and if you are a guest in the home of a former guest, his hospitality must be equal to or more than that which you gave. For regular meetings among a group such as ours this protocol would have destroyed it. Hence, going "dutch"!

Some members drifted into other fields and other lands but twenty years later we could still get six or eight of us together to share an evening of laughter and good food and go our ways refreshed.

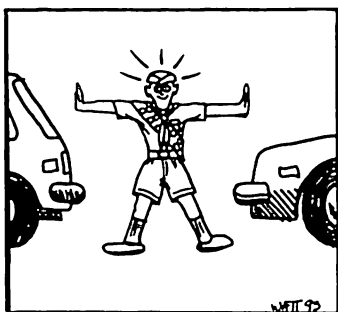
Our relations with John and his Troop resulted in the climax of Scouting for most of us. We participated in a National Jamboree of hundreds of Troops and thousands of boys from around the world in a great camp upon a plain near Mt. Asama west of Tokyo. We competed there but took no honors, rather it was the great experience that we took with us. One lad, a farm boy from a Troop in central Honshu asked me for an autograph and could he be my pen pal. We still exchange greetings once a year and he is a successful farmer.

We had been in Japan eight years and were about to be reassigned. At a Court of Honor one evening the entire Troop, parents and Troop Committeemen marched in and honored me with a "Silver Beaver". Recognition for my 25 years of fun with boys and in guiding them I hope into a better understanding of the natural world around them.

In Malaya scouting was in the British style and less exuberant than in America. In Thailand it was viewed as quasi-military. The boys wore their uniforms proudly, but did more marching and military tactics than we

programmed in U. S. I wanted to, but could not participate in this, for the program needed more nature, but I did not speak Thai and this stopped me.

14. Poachers, Boy Scouts and Revolution



It was 1973; Pilai (my research assistant of whom you will learn more later) and I stood on a trail in Khao Yai National Park of Thailand watching several tenderfoot students huddled over a rasping Sony radio. "What's the problem?" I asked. "Much trouble in Bangkok", she replied. "More Thammasat University trouble?" "Yes!" Later we rode in the back of a landrover out of the north approaching Bangkok. Towers of black smoke stood above the city in at least three

places from where we watched. Armed soldiers halted us and queried the driver and other passengers. I suspect that it was my pale face and red hair that got us through the road block, but I didn't realize it until later.

But to go back a little. My good friend, Somtob Chaiyaphun (Norapuck), was in the game department and he had enemies who kept shoving him from one undesirable job to another. I had urged the department to put him in Khao Yai as the Park Naturalist or as an ornithologist, for much needed to be learned about birds as well as other animals in order to properly administer that great forested park of 2000 sq. km. He was accused of capturing rare birds for sale when he was netting and banding them for population studies. So he was pulled off and employed as a game warden. Probably in hopes that some poacher would shoot him.

Soon he broke open a smuggling ring dealing in deer, tiger and other skins, a whole warehouse of them were to be shipped as cow hides to Japan furriers. Officialdom got him out of Bangkok to the forests of west central Thailand where he could do little and could not see what was going on along the Chao Phya River transecting the city.

He was near a vast wildlife area which appeared on the books as a wildlife refuge for deer, elephants, tigers, wild boars, guar, etc. etc. The ranger in charge came to him with a tale that there were goings-on in the refuge that shouldn't be.

They followed a narrow jeep trail deep into the open forest and came upon a large camp. Huddled near the arena of tents was the squat form of a military helicopter. Hung on poles between trees were the curing meat, hides and carcasses of deer, guar, wild boar and other illegal game. Stacked guns and other hunting equipment were scattered about and by the campfire were the son of the prime minister, several other governmental dignitaries and a female movie star. They were dressed in hunting garb and were enjoying the food and drinks. Somtob and the ranger were summarily shooed away and hastened to leave.

A few days later the camp broke up and the hunters loaded the helicopter with all of their ill gotten loot, their gear and themselves. En route back to Bangkok, the ever-loaded helicopter faltered and crashed, killing six of the occupants, injuring the remainder and scattering meat and hides about the scene.

Taken up by the newspapers, columnists, and conservationists the story gradually unfolded before the public. The Prime Minister tried to hush it up by threatening the newspapers with closure. This only fanned the flames of indignation and rebellion. Here was another example of bad government, and conservation so highly regarded by lip service was being flaunted. Thailand stood high in the number of national parks and refuges that it had reported to the International Union for the Conservation of Nature, the World Wildlife Fund, and to the United Nations, but the public was beginning to feel that this was merely a hollow shell.

Students took to the streets and there were large demonstrations. The government faltered, but the storm passed for the moment.

A few weeks later after members of the high class poachers had gotten out of the hospitals, the funerals had taken place and the static from newspapers had calmed a little, the culprits were brought to court, some freed others fined. Then another political issue related to this brought the Thammasat students out again. There was a big rally in the school auditorium, students barricaded the school buildings and took to the streets. This same son of the Prime Minister as commander of the helicopter forces that were hovering above the campus and the crowds ordered them to fire from the air upon the unarmed and unprotected students. They fired into the throngs and the buildings killing some and injuring many. The students poured from the campus into the main streets.

This was when we came down the road and entered a hushed city. The streets were barren, no traffic, no pedestrians. Loaded in trucks or jeeps, bands of students and other young people roamed the streets. They demolished every police box in town. There was no looting, only gun shops were broken into for weapons and ammunition. The hundreds of jewelry shops, gold shops, banks, remained undisturbed and no windows were boarded.

There was no government. The King had called the Prime Minister and asked him to take his son and leave, to prevent further blood shed. Quickly the minister loaded his household things on military planes and he and his son plus others evacuated for points distant.

For three days the city remained in limbo. No policeman or military man dared show his face on the streets. But a city of three million can't stand by for long. Business must go on. No sooner had the smoke of the burning buildings begun to clear than traffic again began to roll. Shops opened, people moved about.

And who was to protect the city? Who could reestablish law and order? It was never revealed who issued the order, or if the thing was spontaneous, but Boy Scouts in full uniform, insignia, merit badge sashes and all began stationing themselves at busy intersections where they took over the task and unraveled the tangled traffic, bringing order out of chaos. They even made a few citizen arrests to protect the jewel shops. There was no outburst of crime. No! Instead, there was an outburst of relief and thankfulness from the people of the city.

Cars drove up to youth struggling with the traffic or manning the shattered police boxes. The boys were showered with gifts. Food was brought

to them. They were fed, feted and honored. For three days Boy Scouts ran and manned a city of three million. By then a new government had been formed and official constabulary could once more reign. Bangkok had been saved from massive violence and chaos by BOY SCOUTS.

15. Learning To Fly



I had accumulated a few educational brownie points in my two years in the Service, but didn't feel the need for post-graduate courses, especially since I was so busy with the avian research in the Bakersfield area, until I learned that I could use those benefits to learn to fly. I yearned to get some of the feel of the air that so obviously enthalls the swallows, hawks and cranes.

After a few orientation classes and lectures they let me climb into a single motored Aeronica with an instructor. He was a hardened instructor who, I am sure, took his leads from the Hollywood version. Showed me what to do and threw the throttle all the way forward while I struggled to catch up. At 38 my timing had slowed up just enough that the little plane continued to outfly me. After a few ineffectual lessons he gave up and turned me over to another. He was a younger man who wasn't so anxious to make me a fighter pilot.

With the mile long runway and this tiny plane I couldn't understand all of the haste to get it into the air, so I asked the trainer to let me handle the throttle. Shoving it slowly forward the plane responded equally slowly and I could correct the wing dips and responses to air currents crossing the runway and we were airborne. Came the climbing turn, tight turns, falling leaf, nose dives and other maneuvers required of the novice and one day this more understanding man said, "I don't think you know what you are doing, but take it up," and he walked away.

"Stay out of clouds, watch for the green light when you are practicing landing and takeoffs, navigate by the roads, stay away from the mountains, watch for places to land if the motor quits, don't cross your controls unless you have plenty of room in which to fall." I tried to remember them all! Air traffic in 1948 was not very great, allowing me to practice being a bird. Cut the throttle, feel the bumps of currents above green fields or brown desert, hear the wind whistle over the wings. I have never tried a glider, but this was close.

Practicing take-offs and landings on a sloping runway had its thrills. Landing downhill the wheels never seemed to touch as the end of the runway swept up and in reverse taking off on the uphill, the plane never seemed to rise faster than the hill. Finally, flying north up the San Joaquin Valley I looked down only to see that I was over and into the Cascade Mountains. I had been caught up in an approaching line squall. Angling into the wind I fought the little plane back into the valley and could see a wall of dust sweeping across it from the west. Beneath me was a small landing field into which I dived and managed to land not too bumpily and helped the attendant tie down mine and other light planes as the wind whipped at them and another pilot flew in through the dust. I felt so insecure that I left the plane and walked to a nearby road and "hitched" a ride back to Bakersfield.

This experience did not prevent me from obtaining my Single Engine Pilots License; a Dodo flier. A friend in Shafter owned a beautiful Stinson and

let me fly it over Los Angeles at night as he sat beside me and kept me out of trouble. Los Angeles was beautiful at night with clear sky, a multitude of lights, and with search lights plying the atmosphere advertising the opening of new movies. As the Bakersfield project was closing he let me take the Stinson to Humboldt College in northern California to apply for a position in wildlife management and teaching. The job went to my good friend and college mate, Chas Yokum, and I went overseas.

I never lost my love for low altitude flying. In Japan we wanted to learn of the distribution of egrets over the Kanto Plain, that great plain that supports Tokyo and much rice land. I inveigled the Army Air Force to let me use their tiny two seater bubble housed helicopters for this survey. It was a three hour trip; leave a helipad in Tokyo or Zama, fly at 600 feet altitude for an hour northwest to a small military base where we could refuel, east to the Pacific Coast of Chiba, refueling at an artillery base there, and back to the helipad. Each monthly trip a new pilot handled the stick. These were helicopter flight officers who had been assigned desk jobs and who needed these hours in the air to hold their status. As most had not made the flight before, I had the job of navigator. I quickly learned distant landmarks, mountains mainly, to point out to the pilot as I counted egrets in the fields beneath. Below 600 feet we frightened the birds and above it they were difficult to see. As we passed over farmyards the chickens always scurried for cover and the children ran out to watch us.

In Malaya, to get a better idea of the position of the tree in the Gombak watershed where I had a platform, I hired a plane and pilot and Lord Medway and I directed him over the jungle while we leaned out and photographed what we had come to see.

My last low altitude flying was in 1985 when Bill Roe and I hired a pilot to fly us into Aravaipa Canyon in Arizona. We had a young student with us who wished to learn the watershed and feeder canyons of this great canyon, but, not being a hardened flyer, he became very ill as we swept and turned, zigged and zagged through the canyons and valleys, wingtips nearly skirting the canyon walls. Such activity was also a little disconcerting to cattle and cattlemen beneath us, but we obtained some wonderful pictures and learned the geography of Aravaipa.

Flight tales seem to breed more; it was a flight from Singapore to Kuala Lumpur in my favorite "seein" plane, the Fokker Friendship. We had left Singapore and were nearing Malacca when suddenly the air pressure failed and the ship filled with vapor. The cabin was simply a vapor bottle! Maybe you remember your high school physics class. You took a bottle and increased the pressure in it to that greater than the surrounding air. When the pressure was suddenly released, the vapor or moisture in the bottle condensed to form a visible vapor. The reduction in the plane was not such to cause any but a momentary shock to the ears for the Fokker doesn't fly high.

The intercom clicked on, "This is your Captain speaking! We are having a little trouble with the pressure system. We can either turn around and go back to Singapore for repairs or fly at 3,000 feet and you will feel no discomfort." The customers all yelled, "Keep going and fly lower!" So that he

did. The Fokker has large picture windows at each seat so this was a fun ride. You could actually see the terrain over which you were flying.

The Kuala Lumpur Airport in 1954 was only gravel runways with metal sheds for hangars and services. DC2s and DC3s were the flying equipment, so the fact that the runways had the town at one end on the east and a railroad on the west end didn't bother the pilots. As planes got faster and turbo-jets arrived, the noise level went up and faster planes had to drag parachutes so as to avoid overrunning the runways. But the airport was a friendly place. We would take guests out there for good Chinese food, sit under a canopy enjoying the food and watching the occasional arrival and departure of a flight.

Flying north the runways at Ipoh and Penang were also gravel and at Phuket in Thailand the pilot had to watch for water buffalo or yellow robed priests that might be walking on the runway. In northwestern Australia the mining camp bush pilots had to buzz the runways of their tiny airfields to chase off the kangaroos and emus before landing.

By modern sizes the DC3 was a small plane but still heavy. Bangkok runways were surfaced, but the airport was over rice field mud. In taxiing out for a flight to Chiang Mai the pilot overshot a turn, ran off of the blacktop and got stuck in the mud. I have been stuck in mud in both hemispheres but not usually aboard a massive airplane! Busses ran out and ferried the passengers back to the terminal and tractors hastened to pull the plane back onto the runway.

We thought that the cabin smelled of fuel oil but gave it no thought. Landing at Chiang Mai we walked toward the terminal and heard banging behind us. Looking back we were astounded to see workmen throwing the seats out of the plane. A truck drove up, barrels of fuel oil were loaded into the cabin and the plane took off for lumber camps across the mountains to the west. On our return trip we arrived at the airport before the flight came in from the lumber camps. The crewmen rolled the empty barrels out of the door, bouncing onto the runway, and hastily screwed down the seats. Now we knew why the cabin smelled of fuel oil.

Being on time is a problem with any flight. Once in Japan our limousine driver got lost in the outskirts of Tokyo. I had to get him back on the track because in those days there wasn't much of Tokyo or the Kanto Plain that I hadn't driven over or explored. Fortunately the plane was held for us and we boarded to face the stony stares of irate passengers tired of waiting. Another time Chet Southam and I loitered in the Vientien terminal. He said, "Isn't that our flight preparing to take off?" We dashed out, the pilot feathered his props while attendants pushed the boarding ladder back up to the plane and let us aboard.

On another flight my destination was Kuala Lumpur and the flight left Manila for Jesselton, Borneo, a short flight of a few hours. At the check-in counter we were informed that the flight was delayed. A large and noisy American female began to complain that she had to meet a flight from Jesselton to Kuching. About then an announcement told us that the flight had been cancelled. More vociferous complaint!! We were put aboard busses, taken to a beautiful coastal hotel and provided with rooms to wait out the situation.

An attendant gathered us together to inform us that the airline had put us on a plane to Hong Kong. This to the consternation of the overstuffed passenger. She was assured that the airline was making every effort to meet her flight at Jesselton. Flown to Hong Kong we were put up in the Palace hotel for the night and told to be ready for an 0700 flight the next morning. By then the howler was livid. She had friends meeting her in Kuching who came in from the back country and there was no way that she could notify them that she would be late. "But, Madam," said the patient attendant, "we will arrive in Jesselton in time for you to connect with your flight to Kuching." Mollified, we heard no more from her. We landed in Jesselton on time. The connecting flight from Kuching was six hours late!!

Prop flight may be slow, but the most beautiful flying that I ever experienced was in a DC9. The DC10 is of course a jet, but its predecessor DC9 was a four motor prop job and almost as immense as the DC10. We were continuing a study of bird migration and its possible relationship to the dispersion of Japanese encephalitis and had an occasion to visit Iwo Jima to see what birds were there, and if they were involved with the virus. Japanese conservationists were concerned about the survival of albatrosses and other sea birds on islands along the way that had been involved in war activities in the past.

A DC9 was being used by the Air Force as a cargo plane and was to make a regularly scheduled flight to Iwo Jima. We had permission to ask the pilot to circle islands along the way in search of the bird colonies that interested us. Our party included Yoshii, an assistant Hasuo, Dr. Yamashina and myself. The plane had a light cargo and there were only a few seats occupied by military personnel assigned to Iwo Jima.

Taking off from Tokyo we flew the 140th meridian south toward our first destination, Torishima. This is a violently active volcanic island on which the Japanese had established a large weather and volcanology station. From time to time the meteorologists and volcanologists had to abandon the station because of the activity of the volcano. And it was abandoned again for recent eruptions had made it extremely unsafe. Our concern was about a small colony of albatross, possibly the Stellars or Laysan that might still be nesting on the southeast slopes of this massive volcano. Before reaching the island, attendants opened a large door in the side of the plane. Held by belts we could stand in the opening and lean out and look down at the islands or sea. We swung around Torishima, first over the buildings of the station which still stood and then closer and closer to the lava walls and spills with the plane's left wing dipped down so that we could see if there were birds present. The first pass was not close enough, so the pilot swung the plane around again and nearly dragged the wingtip over the lava, or so it seemed. Sure enough, we could see and photograph the big white birds, several of them, nesting or resting on a patch of lava near which fresh flows had passed. But at this height and speed we could not be sure of the species and doubted that they were Stellars, probably Laysan.

Ahead lay tiny volcanic islets only a few feet above the water, sparsely covered with vegetation or sand. We had asked the pilot to circle each of

these, the largest of which was Shitanjima. As we came to each he dropped his left wing and flew around it in a tight circle only meters above the rocks. Centrifugal force kept us tight against our belts and we clung there watching for any birds or signs of animal life. He repeated this several times above several of the islets. Never have I seen such superb precision flying of such an immense plane. The few other passengers strapped in their seats were terrified while we ornithologists reveled in the thrill and precision of it. I could do it with a Stinson or Aeronica, but a DC9!! No wonder our fliers are among the best in the world!! No birds were present and we flew sedately on to Iwo Jima.

And there was the United Airlines pilot who was a jokester and kept telling stories as we flew west over the Rockies, and pointing out landmarks of interest such as "to the north is Pikes Peak and to the south you can see the memorial strip mine dedicated to James Watts." The evening sun was casting great shadows across the wonderful red lands of Utah when we passed over the Grand Canyon. At 30,000 feet he circled this most spectacular of North American wonders, dipping first the left wing and then the right, so that all passengers could look into and photograph its maw. I honored him for his thoughtfulness, but feared a reprimand for him by the home office.

16. *The Far East*



"You don't really want to go there?" commented Bill Reeves as he heard that Ron and I were asking to join the University of Pittsburgh team to go to Japan and assist in a study of Japanese encephalitis. "Of course!" I was forty and each move took me further west and closer to my dream of tropical adventure.

The roaring DC9 crossed the international date line and I entered into a life so full, so wonderful. Twenty-five years of

experiences and accomplishments, fifteen of these walking enraptured among the infiniteness and glory of forests, breathing the green warmth of the tropics and learning, oh so much, but yet so little of its lives.

What follows here are incidents, tales, anecdotes. To recount play by play the numerous trips, experiments, studies, activities would be far less fun than these stories. They are not in chronological order, nor yet related, only in that Lucy, Jeannette, Cam, and I lived the full life of the American scientist on loan to Asian countries for better or for worse.

Our project with Japanese encephalitis was in many ways similar to the studies in California. We were to learn if birds were involved with it and if so, what species. We began with a time honored technique which I detested, gradually hating myself more and more as the year went by. We shot them, quickly retrieved them and drew blood from the heart if it was still beating. The blood was later centrifuged, the serum drawn off and tested for antibody to the virus. We shot day by day until we had accumulated blood samples from 1500 birds of many species. I could not bear to destroy these specimens so each evening I skinned and prepared museum specimens of as many as I could. Eventually I had prepared more than 700 which I donated to the Natural History Museum of the Applied Scientific Research Corporation of Thailand several years later. I hated this technique because it was wasteful and so destructive and in the end paid for it with my hearing. The constant shooting produced a painful tinnitus in both ears so that forever after I could not enjoy the delicate songs of the forest.

More than a year of this, and we became aware of the Japanese mist net. Working with professional mist-netters in the mountains of western Honshu, the blood taken by heart puncture from living birds varied in results from those of the same species that had been shot. We were suspicious of this variability. I did the crucial test; caught a robin-sized thrush and took a sample of its heart blood and then tethering it with a string walked away a few yards, turn and shot it, and again took blood. The serum from the living bird was negative, that after it was shot was positive. Further study by virologists revealed that what was being tested before was elements of tissue extracts released by the torn tissues from the shot wounds. Worldwide, the gun has been laid aside and blood for serological tests can be taken from the jugular vein and the bird released to go its way.

Until arriving in Japan, I had no idea how popular ornithology was among the nobility. Most were world renowned, but in my ignorance as an entomologist turned birdman I had not been made aware of this. Dr. Y. Yamashina was a cousin of the emperor and his two-story fireproof museum in Shibuya, the Yamashina Institute of Ornithology, was within walking distance of the house that had been issued to us when Lucy and the girls arrived in Tokyo. The estate adjoining the museum had been shattered by bombs, but firebombs landing on the institute had failed to ignite it. Its second floor was filled with cabinets housing the collections of other ornithologists as well as those of Dr. Yamashina. Some of those who had not taken advantage of his offer to protect their collections had suffered losses including that of Prince Tsukasukasa, brother of the emperor and head of the Meiji Shrine.

Prop flights in the old days were marvelous, but a bit slow by modern standards. We left San Francisco and spent the night in Honolulu. Refueled at Wake! At that time the conservationists and the Fish and Wildlife Service, along with the military were trying to devise methods of avoiding the slaughter of sea birds as the planes took off and landed. We were deplaned and bussed to an army chow hall for a 0400 breakfast of greasy eggs and SOS (creamed chipped beef on toast). By GI vernacular it was derogatorily "shit on a shingle!" It was daylight when we took off and I was dismayed to watch bird after bird slammed against the wingtips of the fuselage. Later a study revealed that bird flight patterns were affected by the slope of the land and by bulldozing away shoulders and hills their flight was drawn away from the runways and the kill was lessened. With the jet age these runways are no longer needed and the birds have their island back.

Next stop was Kwajalien at night. We stepped from the plane into my first experience with luxurious tropical air. After Californian dryness this was superb saturated air. Each breath was a glory of moisture and warmth and the sky was ablaze with both familiar and unfamiliar constellations. The southern cross hung with its lopsided square above the southern horizon. I had waited a lifetime to join Beebe, Akeley, Martin and Marston Bates in their love of land and climate where "winter never comes."

Hours later we put down in daylight at Guam. Guam a tropical land in a tropical sea! Near the runways was a patch of forest from which multicolored butterflies floated. I started toward them, but another war (the Korean one) had started while we were in the air and MPs herded me back to the terminal with vehemence. To this day I have never enjoyed a walk through a Guamanian woods.

Haneda airport at night and a bus ride to downtown Tokyo through miles and miles of ruined factories accentuated by stark smokeless chimneys and blank windows in parapeted walls.

We were deposited at the 406th Medical General Laboratory of the U.S. Army in Yurakucho and assigned our quarters, mine in the Dai Ichi Hotel for I was suddenly of equivalent Major rank, and Ron in a hotel for lesser ranks. It was the 4th of July, 1950, and he and I rode the trains to Nikko and cable car to Lake Chuzenji, to begin for me almost a lifetime of study of Japanese and Asian culture.

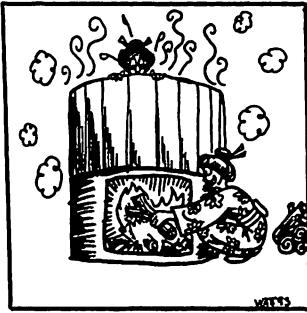
Meeting Prince Takasukasa furthered this. Only a few parks or groves within Tokyo were undisturbed enough to be attractive to birds and among these was Meiji Shrine. It houses the most sacred shrine in Tokyo, that for Emperor Meiji, and as a shrine all living things within it are sacred and protected. Assured by the U.S. Military Police that we could carry guns and collect birds everywhere and anywhere, my assistant M. Yoshii and I entered the shrine area. Yoshii explained to the guards at the entrance our mission and permits and very dubiously they let us in. I was carrying a 12 gauge shot gun for larger birds and a 410 and 22 over and under for the smaller species. The park was deserted at this early hour and I laid the 410 down while we circled a knoll seeking victims. Seeing none we returned and the gun was gone. Back at the gate Yoshii learned from the guards that someone had picked up the weapon and turned it in at the shrine headquarters. Yoshii was very concerned and I too stupid to realize the great social and political error that I had perpetrated.

We were ushered into a vestibule and told to wait. Some time later an official escorted us into an inner office and there we were met by the Prince himself. Learning who he was, I explained the research and progress concerning Japanese encephalitis which was a serious disease of children at that time, and the part that we thought birds might play in it epizootology. He listened and made a few comments while I noted the many bird books and artifacts about the room, and then smiling he returned the gun, wished us success in our study, but not in Meiji Shrine. Deeply humbled Yoshii and I retreated.

Another noble birdman was Hachisuka. His ornithological work in the Philippines was a major contribution, but he was not in good favor among other ornithologists because he was brash, argumentive, and married a wealthy American woman. I met him only a few times before he died on a cruise.

Then there were the two Kurodas, father Nagamichi and son Nagahisa. Marquis Kuroda was a quiet little man with great stature as a scientist. Dr. Nagahisa was working with Oliver L. Austin as ornithologist for the Natural Resources Section of the U.S. General Headquarters and when this activity closed he was on my staff for more than a year. When he resigned he continued studies in seabird distribution and later joined Dr. Yamashina's staff. Nagahisa was an accomplished artist and had illustrated his father's two volume work on Birds of Java when only in his teens. I had found his father's three volume work "Dr. Kurodas Birds in Life Colors" and one volume of his "Birds of Java" at the book stores in the Kanda district, as well as other very beautiful works concerning Japanese birds. The Kurodas had saved land in central Tokyo following the destruction of the city and had their new homes there. Years later, before we left Japan, I visited the elder statesman at his home, with the query did he know where in the city I might find a copy of the Java volume that I had not obtained. While I sipped tea in a parlor provided with western chairs he bowed and disappeared. Moments later he returned with a copy and presented it to me. I was overwhelmed and embarrassed by this generosity, but such is the courtesy and social culture of Japan.

17. Yoshii



I have already introduced Masahi Yoshii, who was a friend for so much of my life and he figures in many of my stories. I suspect that when he is with a group of his friends he tells tales about me. The thought intrigues me, but his stories about me might make my scanty remaining hair curl. I'm a hot-headed redhead and used to get so mad at him. But he always retained his cool and remained loyal. He had tolerated my temper for years when one day after

a nonsense out-break of mine over a triviality he turned on me. I was shocked at his anger and instantly remorseful. I apologized with fear in my heart that maybe I had lost him. When you know all the idiosyncracies of a person, his foibles and failures, successes and hopes, when that person walks into a room and you feel a warm glow, that is the joy of friendship. So it was with Yoshii.

I was stupid and ignorant. Having landed in Japan on the fourth of July in 1950, I knew nothing about the people or the country. I may have been a PhD., but one of my friends had warned me, "Don't be an educated fool!" The job that I had in California had folded and I had jumped at the opportunity to come to Japan on an epidemiological study for the University of Pittsburgh. While Ron and I were hedgehopping the Pacific, to Hawaii, Wake, Kwajulein, Guam and Tokyo, the Korean war had broken out. Sure, we had fought a war with Japan but I still didn't know anything about the country except that it was beautiful and had a sacred mountain.

All that I knew about the Japanese was what I had read in newspapers and magazines and I discounted most of that. I'd been too busy working with birds and insects to give thought to the people into whose lives I was being thrust. So there I was, ignorant but enthusiastic.

My office was in the U.S. Army 406th Medical General Laboratory which at that time was occupying a building on the corner of 4th and Y in Yurakucho. The Japanese didn't know it as 4th and Y. Tokyo, a city of several million didn't have street names or numbers. When the palace and its surroundings had been built some three hundred years in the past the shogun had kept his samurai busy building walls, moats, and other structures, so busy in fact that it kept them out of trouble and from wrangling among themselves. They had their encampments about the fertile alluvial plain formed by the Tone, Ara, Sumida, Edo, and Tama Rivers. These encampments became villages and gradually swelled in population until they fused into the metropolis of Tokyo. Places in the city were identified by location and houses were numbered consecutively as they were built. When the Americans arrived all of this was too complicated for them so they named and numbered the streets. Ask a taxi driver to take you to 10th and A and you got a blank stare! Ask to go to No. 10, 3-chome, Shiba-Hamamatsu-chu, Minato-ku and he would smile and take you there by the shortest route.

The commanding officer suggested that I needed a Japanese assistant and

interpreter. In a small room in the basement was the Japanese personnel office where hopefuls waited to be hired if a job appeared. I found several young men seated on a bench. Now how was I with my lack of experience going to select a Japanese assistant? I knew nothing of their interests, qualifications, or how to judge Japanese character. No one told me, but I could have hired professional ornithologists for the job for many were available. Even though I claimed to be an ornithologist I still did not know how intensively birds had been studied in Japan and what tremendous ornithologists and biologists were present.

I look hopefully at the faces of the young men trying to withhold their eagerness and need for a job. I remember that there were six. Which of them could speak English? They all looked up. Which of them knew anything about birds? None of them did. I wasn't making much headway. Well, which of them were married? Three held up their hands. Now what do I do? Well, if they were married those with children would need the job most urgently so I asked, "Which of you have children?" One of them stepped forward. He was Masahi Yoshii and so it began. Married and with a newborn son. And what a wife he had, Teruko, beautiful and talented; a girl from the northern province, Aomori. She has gotten a little plump as the years have rolled over us, but she is still beautiful and talented, an accomplished koto musician and a recognized authority and teacher of the Japanese tea ceremony.

So Yoshii hired on. A college graduate with a masters degree in business administration. Honest almost to a fault. Sickly with lungs damaged from earlier sessions with tuberculosis. Forgetful! He couldn't even remember where his feet were and was forever stumbling. A smoker who searched his pockets vainly for that cigarette or match which should be somewhere. It was a common scene to have him stand frantically searching his pockets for some misplaced item.

He loved Teruko completely. Other Japanese men may love their wives also, but it is not the custom to show them off or to demonstrate this love in public. But Yoshii respected Teruko and was proud of her. Where other men left their wives at home, he brought her to our parties. If others brought them at all they ignored them and the wives drifted to one side, but not Yoshii. Teruko could not speak English so when things went on around her, Yoshii kept her in the picture by translating what was said. He never left her out.

Twenty-five years rolled over us and we had innumerable experiences together. Yoshii had tuberculosis when younger and had part of a lung excised. He was thin and pretty poorly fed and clothed in the early days after having struggled through the last years of the war. The commanding officer of the lab insisted that he was a bad risk. Under the many hours of field work in rain or shine he would break down and then the U.S. Army would be responsible for his welfare. So he insisted that I let Yoshii go. After a year I did so, very much against my will, and regretted it right away. However, Yoshii did not hold me responsible nor did he seem to resent the situation. He often came to see me. He got a job with a company furnishing lumber for U.S. construction and since he was an accountant they put him in charge of the books. He audited them with objective of improving their bookkeeping methods and in so doing

discovered that the company was stealing from the U.S. by mixing lower grade lumber with high grade A lumber demanded by contract. Being completely honest himself, this shocked him and he discussed it with me. He said, "I must call this discrepancy to the attention of the company president, for it is a wrong thing!" My response to him was, "If you do, they will fire you!" He did and they did!

Incidentally, the commanding officer died of alcoholism and Yoshii is still in good health. Also, I got him back on the payrolls soon as there was a change in command. I often wonder at how long suffering Yoshii was. With my quick temper and lack of understanding of Japanese customs, he must have been furious on innumerable occasions. I can only remember him becoming openly angry at me on the occasion mentioned and I was immediately remorseful for it was an inconsequential matter that had provoked me, resulting in his anger. As the years passed I learned a safety valve which controlled my temper and which reduced tension between me and my staff or friends. Before each outburst I would ask myself the question, "Is this important enough that it will affect next year?" Surprising how few things in daily life are of great enough import to affect next year and thereby be worthy of anger.

Although he needed this job, Yoshii had other interests as well. He had a small toy assembly factory in his home. The product was a little jumping rabbit, the machinery for which came from another home shop and made of tin can metal salvaged from U.S. military housing. The mechanical part was delivered to him and he and six others glued fur on it to complete the rabbit. His margin of profit on each toy was two yen. The price of rabbit fur went up two yen and put him out of business soon after he joined me.

He liked to tell this story about himself. It was just at the end of the war. Tokyo was in chaos, railroad stations burned and broken, train travel uncertain and confusing. An American officer stood on a platform wondering which way to go, what train to take. Nearby he saw Yoshii somewhat shabbily dressed and asked if he spoke English. With an affirmative answer, he asked directions and when Yoshii told him, the officer offered him a cigarette. Yoshii stood erect and declared, "I am not a beggar!" Later he learned that this was a gesture of friendship, not a payment.

Part of our study was with egrets and Black-crowned Night Herons in which we had found high levels of antibody to Japanese B-encephalitis (JBE). Now we wondered if these birds could pass their antibodies on to the chicks. We had been given permission to build an aviary in Hama Park near downtown Tokyo. Hama Park had been a place of glory once. It had housed a palace, had beautiful gardens, royal duck ponds and all. Bombs and fire had destroyed the palace, the duck ponds were fallen into decay although they still attracted ducks and cormorants, many of the gardens had grown up in weeds and brush. Part of the gardens were being maintained by park employees for now they were part of the city parks department. From a breakwater you could look out over Tokyo Bay and watch ships anchored there or plying the channels into the Sumida River and the other rivers sectioning Tokyo. Thirty years later, this bay has been filled in and the park, although resurrected and beautiful, looks out only at concrete and steel with open water in the smog-shrouded distance. But

this story was before these modern halcyon times and we had built our aviary back in an open space near the duck ponds.

Since it was a public park, a group of laborers cleaned it every day and gradually were rebuilding the lawns and gardens. One of the laborers was a puny old man with a set of silver teeth. Gold teeth had status and many Japanese flashed gold-studded smiles, but this little man had a mouth full of what appeared to be silver teeth. What their composition was, I never learned. He was kind and gentle and Yoshii often chatted with him. Apparently he was well-liked by the other workman as well. After a year or so he seemed to be ill and was gradually wasting away.

The yen was valued at 360 to the dollar. If my memory does not fail me, these workmen were being paid 400 yen a day. There was still the rubble of shattered factories from Yokohama to Tokyo, and there were so many transients and unemployed floating around that the workmen collected their pay at the end of each day. Many came and went, but some like Silver-teeth stayed on month after month. There are many days when the weather in Tokyo is cold with drizzling rain and during such days when the workmen could not work in the gardens, they were not laid off, but were paid 200 yen. My figures may not be right, but that is the level of the pay scale.

Banks were not to be trusted, but the people did have faith in their nation and many of those who saved put their money into postal savings. Japanese are frugal and even those Hama Park workers were holding back some of their meager pittance. Tin cans weren't safe, banks weren't safe! They decided to make a banker of one of their members and he could put their money in a postal account. And they selected Silver-teeth! Each week they had an accounting and gave him the money that they had saved and which he was to hold for them.

Alas, he too was mortal! Came a crisis when they needed their money and it was not there. Temptation had destroyed him and he had spent it. Illicit women and sake, possible, but the money saved was not all there. The owners held court! The justice that they meted out was both effective and terrible. Each day they would take the money that he had earned until the losses were all paid back, but they would not take it all. They would give him part which would keep him alive, but he would slowly starve while he worked for them. There were too many for him to escape.

So he was gradually wasting away. But the ending to this story is a happy one. He didn't starve to death, but survived until his debt was paid and months later he was flashing a healthy, happy silvery smile again.

As we all know, the military mind takes itself very seriously. This is universal. I wouldn't attempt to go into the psychology of it.

I was doing some unclassified research for the U.S. Government when a classified letter came to the American Embassy for me. With due procedure I passed the proper guards with proper credentials and finally ended in a small corridor with a Marine sergeant behind a desk. He presented me with the

valued letter, the contents of which proved inconsequential. Disgusted with this obtuse formality, I quipped, "Now what do I do, eat it!" The Marine was not pleased!

One of Yoshii's favorite stories related to an early morning American attack on one of the Japanese naval bases where he was stationed. The attacks from carrier-based planes usually came in at an altitude too low for their radar to pick up at a distance and in the morning when personnel were at breakfast.

Since the pilots must leave the carriers early to make the attack, they were furnished with box lunches. You know the military box lunch; cold chicken, a dry sandwich, an apple, orange or grapefruit, etc.

On this particular morning sirens screamed, people scurried for cover and the American planes were immediately overhead and strafing the base at a low altitude. One gunman, disgusted with his breakfast rolled over and threw his grapefruit out of the cockpit. It bounced somewhat bruised onto the parade ground. The attack was over as quickly as it had come.

The grapefruit was found. medical and bomb disposal squads were called in. After some surveillance it was gingerly removed to the dispensary. There it was viewed with concern by the mental giants of the base. Was it a new biological warfare weapon?

Yoshii and I had been assigned to put up bird-baited mosquito traps at Shin Hama, the Imperial House bird refuge on the shores of Tokyo Bay. In those days there were only rice paddies and villages around the refuge. We had found a lumberyard and had bought two small telephone poles to act as supports for the cages of birds that we were to put up. We tied these poles on the sides of the jeep. Yoshii said, "What if an MP comes along? It is probably against the rules to do this!" My reply was that no MP could be expected on this side road far from the environs of Tokyo. As we looked up from our work, down the road came a Military Police car. It stopped and the sergeant stepped out to check our ID cards. Then he wanted to know what we were doing. Now to try to explain to a hard-headed sergeant that we were putting up bird cages to catch mosquitoes was in the realm of fantasy. So I told him that we were putting up flag poles on a nearby station. This sounded legitimate to him and he drove on while, relieved, Yoshii and I continued with our mosquito catching efforts.

On another occasion we were making a study of bird migration in eastern Asia. We had a well-trained Korean on our staff, one whom we had brought from a study team in Korea and who later received his Ph.D. in ornithology from Sapporo University. Natural areas in the lowlands of Japan where there is an abundant bird population are few and far between but military bases generally protect wildlife since the areas are guarded. From higher authority we had permission to make use of an ammunition dump, no longer used for that purpose, but still under protection. We assigned the young Korean there where he could carry on bird studies and where he could effectively capture and band birds for our migration studies. He had been at work for several weeks and was successfully marking many birds.

One afternoon my phone rang. A voice identified the speaker as a sergeant on special investigation for the military police. "This is Sergeant So-

and-So from Such-and-such army supply base." "Yes?" "Do you have Mr. Woo Won-tan working for you?" "Why, yes, he is on our staff." "Did you know that he is a SPY?" I wanted to laugh, but dared not and managed to get Mr. Woo off the hook and released by an explanation of what he was doing and using the proper authoritative names.

The subject of food always precipitates a long discussion. People's gastronomic interests are motivated by juvenile experience, habit and curiosity. Palatability is related to habit more than to the tastiness of the food. Research has shown that appearance of food is more important than palatability or energy requirements. Fat people can be made to diet simply by serving them food that doesn't have an appealing appearance to them.

The Japanese are masters of the art of making foods appealing to the eye. Food is served gracefully and in dishes and arrangements that delight the eye. They are quite perturbed that westerners, especially Americans, will not even try their food without prejudice.

Being an ecologist, food to me is one of the experiences associated with environment and has resulted in many interesting moments.

The usual Japanese home is immaculate, in spite of evident and heavy usage, but over in western Japan we once found a farmer whose home was absolutely filthy. He was a bird netter as well and we had him supply us with specimens. His house was a mess; dirty wife, filthy kitchen, runny-nosed youngsters, scrounging dogs and cats, poultry under foot, mud and disorganization. We had been acquainted with him for several years and he was a proficient netter.

During our last trip to this part of Japan he felt that he should entertain us and invited Yoshii and me to supper. We looked at each other aghast and decided that as guests we could not refuse. We found that he had also invited the local game warden who joined us at our inn to drive to the farm. He had known this man for many years and was as dubious of the quality of the meal as we were.

When we arrived, the farmer was cleaned up, fresh from a bath, in a threadbare but clean suit and he ushered us into a section of the large old farmhouse we had never seen. It was beautiful and immaculate. Clean tatami, beautiful kakemono, and table covered with gracefully served delicious food. It was served not by his wife, who decried herself as old and ugly, but by her younger sister who had a beautiful kimono. The evening was delightful, but what was most enriching was to learn that even the meanest of homes was basically artistic and graceful.

The great myth of the submissive Asian boudoir mate is nowhere more firmly exploded than among Japanese farm wives. Even if one has a domineering husband, and the Japanese men are sure good at that, she is apt to be so subtle and clever as to let him have his way and still run the household and family finances. I knew of one father-in-law who was so domineering and inconsiderate that he was actually starving his son's new bride.

She was one of Teruko's sisters and had to visit Teruko often to keep from starving on the meager rations permitted her by the old man. The father-in-laws' death solved this dilemma. But Teruko is of the new school and in the early days, she would permit Yoshii 70 yen a day (about 20 cents) for his carfare and cigarettes. He thrived, though, since he carried his lunch and was adept at Pachinko where he could augment his supply of cigarettes. But to get back to farm women.

I spent three years visiting, often for several days at a time, a farm family at the site of the famous Sagiyama Heron Sanctuary. There I was studying the ecology of Japanese farms in relationship to wild birds. The family included Father, Mother, elder son who was helping with the farming, elder daughter who was married to another farmer, middle son who was an office worker in a nearby town, a middle daughter the beauty of the lot who also helped on the farm, and the youngest daughter who was of middle school age at the time. This was a remarkable family whose savings had been washed away by the devaluation of the yen, but on the 2 1/2 acres of rice and truck crop land they grossed more than three thousand dollars a year and before I left Japan, they had again saved enough to build another beautiful farm home, this one with modern appliances such as stoves, refrigerator and a flush toilet. (See *Inago-Children of Rice*, 1993.)

It was the mother who managed this crew. The father never knew that he wasn't boss. Each day she and I would chat at lunch time, me in my limited bastard Japanese and she in a flow of Japanese and pantomime.

Another farm family was not so affluent, but they were possibly more fascinating as individuals. Again the farm was north of the city on the Kanto Plain and of no great acreage. The mother was a tiny sprite of a woman with fire in her eye and a consuming humor. The father was a shiftless farmer but a bird netter, hunter, and guide for hunting parties. My memory fails me as to the number of children, something like eight girls and a boy. I believe that the baby was the boy, and the girls ranged up to teenagers and budding young women. On one of our regular visits, the kids were bathing. A bath in a farmhouse usually consists of a large wooden tank, deep enough for one or two people to stand in and immerse themselves, and fitted below with a charcoal or wood burning stove. You stand on a wooden platform in the tub, but the water contacts the heated metal of the stove.

At the moment that I rounded the bend in the trail bringing me to the back of the house, one of the lovely teenagers was in the tub. With a squall she immersed herself. This, of course, was the result of western movies and the national decree that bath houses should have the sexes segregated. But the younger daughter who was tending the bath did not have these sanctimonious views. Hers was the humor of her mother. Rapidly she fed firewood into the already glowing firebox of the bath tub. I remained at hand to watch the fun and to add consternation to the simmering beauty. More wood, steam rose from around her! I wondered if parboiling would improve her sex! Finally with a scream she leapt from the steaming tank and rushed into the house followed by peals of laughter from the whole family who had gathered to watch.

This family with a hunter and fisher for a father lived off the land more

than many and the mother served a most amazing cuisine. No matter how poor a family, tea time is a moment to relaxation and eating, and a guest must be plied with tea and sweets or tidbits. She was apprehensive of me at first, but Yoshii assured her that my taste and appetite were catholic. Though some of the things presented to me with tea looked dubious, I always ate them with gusto.

It became a matter of experimentation with her. Was there anything that she prepared which I wouldn't eat? What all passed my palate I'll never know but the crowning event came one early fall afternoon when she served me grasshoppers prepared as tempura (fried in rice batter). The rice fields are attacked by a medium sized green grasshopper known as Inago or "children of rice". They can do extensive damage, but have commercial value for their oil and are edible as well. Wings and legs removed, fried in deep batter, they turn red as shrimp and have a shrimp-like flavor, only grittier.

This stopped my hostess, for I not only ate her grasshoppers but asked for some to take home for the enlightenment of my daughters. Here gustatory experiments ceased and we went back to rice cookies and tea.

On the subject of eating, everyone has his or her dislikes and taboos. The subject of food has filled many books other than cook books and Gourmet magazines. Likes and dislikes are imprinted so deeply and often so early in life that their origins are often completely obscured. I watch a child eating something with relish and realize that in all probability when he is adult he will still relish this food even if it is not then good for him. Choco-holics for example! I often find that my anticipation for a food is blunted by the fact that it "Doesn't taste as good as it used to!" "Not like my Mother used to make," we hear.

Although allergies are very real, many stomach upsets from food are purely mental. My older daughter ate eggs until she went to first grade. There, of course, she was impressed by her teacher and her peers or companions. One day she refused her breakfast egg with "Oh! I don't like eggs! They make me sick!" As an adult she still claims that eggs upset her, but what started it all was this same statement made by one of her little girlfriends in first grade.

There are food eating taboos in every land and in every religion, but the Thais came as close to eating everything organic of any peoples I have met. Of course, medicinally, many inedible and unappetizing things are ingested and one marvels at the capability of the human digestive tract to handle some of these.

I like to tell the story about Lucy's *hors d'ourves*. Trappers in the sandhills did not waste animal carcasses in the winter, but hung them on the outside of their cabins to freeze. Many of these I brought home to supplement our protein; raccoon, possum, bison, venison, muskrat, etc. Muskrat is a delicious meat and Lucy had several of them in the refrigerator. One of her women's clubs met at our place and she had prepared a snack for them with little sandwiches of muskrat meat prepared as a chicken salad would have been; in other words they were muskrat salad sandwiches. The bridge games were over, the chatter was going on when in a quiet moment one women exclaimed, "These sandwiches are delicious! What is your recipe?" Voices stopped as the "girls" all listened to Lucy's answer. She named the preparation and the

ingredients and when she got to the muskrat meat faces blanched. Needless to say her party broke up hurriedly. No harm done! The town thought it was a good joke!

Because of these self-inflicted taboos in food people miss a lot of culinary delights. By the same token, we can learn to eat things as children which our adult palates cannot take. I was walking along a jungle path in Malaya accompanied by the five-year old son of the aborigines who was doing some animal trapping for me. He broke off the shoot of a plant and chewed on it with relish. We passed another such plant and he took another twig to chew. I figured anything he could eat I could. So I broke one off, too. As I bit into it my head exploded. It was a plant with salicylic crystals in the sap and it burned my tongue and throat severely but he relished the flavor and tang of it and grinned as I sputtered and spit out the residue.

Our Thai, Malay, and Indian friends like highly seasoned foods. When I eat their food my palate is so assaulted by the peppers that there is no flavor, only an unpleasant burning and constriction in my throat. When I convinced the cook to prepare my portion without the hot sauces and red peppers I found that the products were delightful with subtle flavors which were vary palatable. I asked them why they spoiled it with the peppers. They countered that western food is so bland that it is tasteless and nauseating. When you are away from home a difference in food palatability can affect your whole outlook on life. A Thai friend visiting in America was losing weight because the food just wasn't tasteful to him and he was homesick. Someone introduced him to a bottle of hot sauce and this so pleased him that he carried a bottle of it with him. Applied liberally and making his food interesting again it made his trip a success.

When Sheldon Severinghaus and I were exploring the island of Palawan I found that the food was, by my standards, atrocious. I didn't know that you could spoil rice but they managed to. It was grey, unsightly with weed seeds and lumps. Upon invitation from a local village headman we went to his home for supper. His wife was so shocked by the presence of two westerners and a government official that she slaved to make a good supper, it taking her hours over the tiny hearth fire. It was nearly nine p.m. before we sat down to as unappetizing a meal as I ever struggled with. Poor rice, boiled, uncleaned pig intestine, curries, bony chicken. I could force down only a few mouthfuls, but her children and relative who must wait until the guests had finished were bugged with anticipation. As soon as we left the table they fell upon this banquet happily. After a week of this kind of diet I was steadily losing weight (down ten pounds). When we got back to Manilla, both Sheldon and I gulped down three large chocolate sundaes to wash the taste of Palawan away and set our stomachs right again. (There are other stories from this trip and they will appear under other headings.)

Jack Moyer was a young Air Force sergeant who joined our staff in 1954, though tall, he loved children and was stoop-shouldered from bending to converse with them. He and I enjoy Japanese food and we once made a trip to Miyakejima (one of the seven islands of Izu) in company with a young army doctor. Jack and I wanted to see what birds were present on the island the

doctor was interested in the children's diseases. Jack and I had been to this island many times, it was his favorite island which he had made famous through his special socio-studies with the children and the school system. He has continued his work there and is much revered by the people. Where we stayed was a fisherman's inn and although it was really a house of entertainment, it served our purposes very well; adequate rooms, good service, and good food. The doctor made the mistake of immediately inspecting the kitchen when he arrived. He announced that it was unclean and that we would be unwise to eat the food prepared there. Both Jack and I scoffed at this, saying that you shouldn't look into kitchens and then you wouldn't worry. But it got to him!

We were to stay only a few days, but a typhoon roared in and we were stranded for nearly two weeks by the high seas. The doctor began to starve! He rolled over in his futon (bedding) nauseated as each meal was brought in by our pretty hostesses and Jack and I unsympathetically ate his portions as well. We worked every day exploring the island and its many habitats and listing its birds. We bought butter at the local dairy to decorate our rice, ate all of the many kinds of raw fish and sea foods offered to us.

The doctor was really ill, lost weight, called the mainland for help and was told to forget it. Tried to bribe the boatmen to take him to Tokyo which they were not about to do in the high seas, and he lay in his futon and moaned and lost weight. Needless to say, when the storms abated we got him home to sanitation and health again. Only time I ever saw a man make himself sick because he thought his food was unsafe.

About the most difficult week I ever put in, gastronomically speaking, was one in a small village near Sendai, Japan. It was a fishing village and we were renting a whaling boat during the off season in order to explore among the off shore islands for sea bird colonies. Each night we returned to the harbor. A highlight of that trip was when we rode over a school of hammerhead sharks, spectacular and beautiful in the clear water beneath us.

We staying in the home of the fisherman owning the craft, and his wife was our hostess. She served us squid. Now squid is very delicious when prepared properly, and I enjoy it, but as a daily diet it lacks something. We had raw squid, fried squid, squid salad, boiled squid, smoked squid, pickled squid, squid ad infinitum. Nagahisa Kuroda was with me (or rather I was with him as it was his expedition) and finally I asked, "Do these people eat a steady diet of squid like this?" "No," he said thoughtfully, "I think she was trying to make a profit off of us." Squid was the cheapest thing that she could serve us.

During our eleven years in Tokyo we learned to enjoy its many facets, even though in the past few years it has grown and reconstructed, losing much of its charm, but there are still not many parts of it that I have not explored by foot. Because it is such a fascinating city I enjoyed showing it off. After showing it to friends they often wrote, "I have a friend coming to Tokyo, will you show him (or them) around? This is a dirty trick to pull on your friends, but then it is usually a fun experience for both parties.

This time we were living at Tachikawa and not in the city itself and I drove the thirty miles through teeming traffic to find that my guests were late. I had a routine which I usually followed when introducing guests to Tokyo; a

route which allowed them to sample the sights, smells, and sounds and climaxed by supper at a lovely old fashioned inn in the Asakusa district. All of the Asakusa area has been rebuilt since my Tokyo days and this Inn no longer exists. Its place has been taken by a multi-storied recreation emporium. The Inn, completely surrounded by other buildings, was in or bordered by a small artificial lake. The tea rooms were designed as rustic boats floating on this pond, connected with the main dining rooms and kitchen by ramps, all tastefully sheltered by azalea, wisteria, bamboo, and pines in traditional style. The tea rooms were, of course, tatami floored and walled by lovely shoji doors, tokunomos with their kakemonos, and all. At the entrance from the street you shed your shoes, stepped up into the hallway to be greeted by the owner or one of the hostesses and before you was a large temple gong. This he or she struck as you entered, one reverberating peal for each guest, to bring good luck to the guest and to the inn. A delightfully kimonoed hostess was assigned to you and you were led along the ramp ways to your quaint tea room. The food was par excellence. A fitting climax for an afternoon of exploration and a happy day of sight seeing.

My late guests finally arrived about 1400, having come to Japan by ship which was late in docking at Yokohama. They were booked in the Okura which was the plushiest of plush hotels of the time and they had missed their lunch; a man, his wife, and their female companion. Such a late start sort of put a crimp in my plans, especially since they insisted on a snack in the dining room. The man ordered a hamburger and a chocolate milkshake. The waiter politely informed him that they had the hamburger, but no milkshake. They soaked him two dollars for the hamburger (outrageous in those days when you could get a whole meat for that) and he never even batted an eye.

As we went from place to place they tried to appreciate the things that they saw and what I was telling them, but it was beyond them and they were suspicious of it all. Finally at the Inn where the hostesses all knew and bowed to me, we were ushered in, accompanied by the booming of the gong. Seated on the tatami in the lovely room (no, they didn't have any chairs). I ordered a meal for them, but they admonished me, "No, they didn't want to try any raw fish!" In fact, they were not keen about trying anything so I ordered sukiyaki for them. Suki-yaki is really western dish with a Japanese flavor developed through the years as more and more foreigners and foreign foods came to Japan. A gas burner is set upon a protective mat on the lacquer serving table and the petite hostess cooks the aromatic and enticing dish before you. This operation left the guests unmoved as well and they were horrified to learn that they were served a raw egg to go with the rice. As the steaming tasteful dish was placed before them, they asked for forks and sampled it gingerly. The man laid down his fork and offered, "Let's go back to the hotel where I can get a hamburger!"

Early in the morning slow plodding oxen drew heavy flat-bottomed wagons through the streets of Tokyo and other cities of Japan. Tiered up to

depths of three rows, heavy, wooden lidded, but reeking buckets mounted these wagons. They were the sewers of much of Asia and the much needed fertilizer for the farm lands of intensive cultivation around its cities. Early in the fifties these were common to all cities and it was the usual course joke among motorists about what happened if they accidentally struck one of these slow moving odorous vehicles.

Except in the cities now turned to sewage systems and flush toilets, the open toilet is still widely used in Japan. It is usually at the back of or to the side of a house and consists of a tank into which the human wastes are deposited. In the toilet, or "o-benjo", there is an oval hole in the floor above this tank. You squat over this hole and usually you furnish your own toilet paper. The place can't help but stink, but the sanitation is better than that around many public toilets in the western world. In two storied inns or houses the feces just have further to fall.

These tanks all have an outside opening from which by means of a long handled wooden dipper, usually standing near by, the contents can be removed and poured into the wooded "honey-buckets". Depending upon the locale, the home owner may pay a small fee for this regular service or even be paid by the tank cleaner, for its contents have sale value. Having hauled the product to the country, the "sanitarian" has his regular customers among the farmers to whom he sells the contents. The waste is not poured upon fields which would be lethal to the plants as well as to the customers. It is poured into concrete digestion tanks, usually housed in a small shed, where it is allowed to stand for weeks or months as bacteria and insects convert it to a less lethal organic compound, though still smelly. (I once spent a year studying the insect fauna of such tanks.) From these digestion tanks the farmer takes the fluid to his fields to be worked into the soil. Even though human manure is deficient in some plant nutrients, the soil so nurtured produces two to three crops a year.

In our culture we had, of course, the out-house or "Chic Sale" about which there have been spun numerous jokes, tales, and funny incidents. I had a young taxidermist working with me in Nebraska and he had a lovely, but shy, new wife. They had invited me for a mid-day meal and his sweet wife was outdoing herself to demonstrate her culinary art. But to their great embarrassment, right at lunch time, their puppy fell into the outhouse and had to be resurrected and cleaned.

Other cultures have other methods of disposing of their wastes. In India you just go to an open field early in the morning. From my hotel windows in New Delhi or Bombay I could see local folk relieving themselves in the dawn about the nearby pastures. In Bali I looked in vain for a toilet and was told to go out in the orchard at the back. The beachside dweller of S.E. Asia goes to the shore to let the waves carry his feces away. Or in Java you deposited into or along the edge of a nearby stream. In Thailand, if the house was by the stream or above it, you deposited there. And in Malaya, it was scattered about the coconut or nipah palm groves.

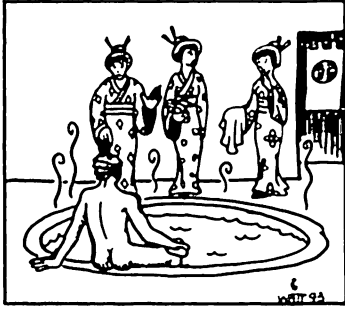
Except where drinking water became contaminated by such methods, this scattering of human wastes did not result in flies and disease. Quite the contrary! Dung beetles and other insects quickly buried the turds and you

rarely saw even a fresh one. Such a method in the tropics had been handed down from culture to culture for millennia. And then along came modern thinking about sanitation. The sanitarians were horrified! The poor benighted natives must be educated! So the farming compound or country villages were "educated" and shown how to build out-houses and slit-trenches, etc. in order to contain and isolate these wastes. And as usual, such dreamers forgot about human nature. They forgot that people don't always do as they are told and these out-houses became neglected. The tanks were not filled or treated regularly with insecticides. The fly population increased geometrically and so did several insect borne diseases. It was better the old way.

We had brought a Korean farmer, who was an expert at netting birds, to Japan in transit to be sent on to Taiwan where he could teach the bird-banders there how to properly make use of the mist-net. For the night or so before going on to Taiwan he was housed in a modern plush Tokyo hotel. Knowing that everything was new and strange to him, Yoshii explained about light switches, telephones, and the use of a flush toilet. He was in a western hotel so the flush toilet was for seating not for squatting. Eyeing it with misgivings, the Korean lad said, "The Americans must be able to balance very well to stand on that narrow edge!" Yoshii assured him that we sat on it and did not stand on it.

Yoshii and I were at an inn in a small village somewhere in western Japan and as usual I arose early to get in some bird watching before our hostess would bring the breakfast. All was quiet, the clientele was sleeping, even the kitchen was quiet as I dressed in the cool dawn and went down the hall to the "o-benjo" before going out into nearby woodlands. Squatting above the hole with my trousers bunched under my knees, I heard something fall from them into the pit below. My first thought was, "Oh no, my wallet!!", but I had forgotten that I had my dark glasses (sun glasses) in their case in a back pocket. In the faint light I could see the case floating upon the nauseous accumulation beneath. How to rescue it? I remembered the long handled scoop outside. Quietly going out I brought this in and hoped that no one's bladder would disturb him for a few minutes. With a flashlight in one hand and the scoop handle in the other, I reached down through the toilet opening and eased the scoop toward the floating glasses case. It sank! And so did my hopes of recovering it! For several frantic moments I slowly searched the residue of many rice and fish dinners and finally brought it to the surface. Delicate maneuvering brought it up within my reach. I fled down the hall with dripping scoop and glasses, left the scoop at its proper place, washed the glasses and case at an outside faucet, and returned to my bird watching. Oh yes, the case did smell for a while, but it wore away!

18. Moonbeam Inn



During the first few years of occupation, the Medical Laboratory had the use of a laboratory train equipped for field research. It was made up of three cars; a boxcar with refrigerators, electric generators, and a room for a Jeep; a laboratory car with benches, cabinets, centrifuges, a dining room, and kitchen; and a pullman, including lounge and six staterooms. This train was much in demand by medical researchers and Yoshii and I rarely had an opportunity to use it.

Once we took it north, attached to a regular train, and upon reaching our destination, it was shunted onto a siding. It was usual for it to remain on a siding while the medical team made their surveys and studies, serviced by a locomotive that provided heat and power. We pulled into a small town after dark, were put upon a siding, and crewmen in charge connected our electrical inlet to the town circuit. He threw the switch that brought power to our multiple equipments, gradually dimming the towns' lights to near darkness. Yoshii said, "Hey! That won't do!", and we started up our diesel generator, allowing the town to be lighted again. As it was cold and we needed heat, they brought up and attached a small locomotive. I was awakened in the predawn by men making up a freight train. They were pushing the cars by hand to assemble it. We had commandeered their only locomotive!

It was months later and Yoshii was not with me, Dr. Kuroda was on the staff. This time it was a trip south to the southern tip of Kyushu where we hoped to learn what birds were moving south off the archipelago in southern migration. We pulled onto a siding, rolled the jeep down a ramp, and were to meet the train at another location after we had spent several days exploring. Our party included myself, a red-head, Capt. Bob. Smith, a blonde, and Kuroda, a brunette.

The first night the train was near a town and we drove in to sample the entertainment, stopping at a night club that proved a bit wild. The waitresses were also prostitutes. Several approached our table, seeing profit in the two farangs (foreigners). They offered me a cigarette, but I don't smoke. They plied me with sake or beer, but I don't drink. They offered to take me upstairs, but I demurred. In disgust one of the girls said, "Whatsmatter! You Christian poppasan!" When a bouncer threw a drunk on the floor and the girls kicked him in the groin, I lost interest and returned to the train.

Leaving the train, we drove down the east coast along beautiful beaches where I found a driftwood log of a twisted cedar, later having it made into a lamp stand which still adorns our living room. We hired a small boat for a short trip off the coast of the southernmost tip of Kyushu in sight of active Mt. Sakuraji-yama, during which I made a long distant shot at a sea bird which dropped. As we pulled the Brown Gannet from the water, Smitty said, "I don't think that you even recognize what you shot!" Back in Tokyo an old, nearly blind taxidermist mounted it so lifelike, it too remains with us as a gannet

flying above my desk.

We had driven all day through spectacular countryside and as sundown approached, we were on the west coast near a small fishing village. The beautiful village surrounded a deep cove with a shining beach and a breakwater built out to protect the fishing fleet. Built before the days of automobiles, the streets ran parallel with the beach and there were no intersecting streets leading down to the shore. Instead there were wide stairways. A lovely inn, Moonbeam Inn, was on a southern promontory of the west facing harbor overlooking the sea and village. Steps are no problem for a jeep so we thumped down to the beach and drove along it to the portals of the Inn.

Our beautiful room on the second floor had the sea gleaming with moonlight and the lights of the village shimmering upon it beneath and before us. A petite, kimono clad hostess was assigned to our room and when she said that the u-furo (bath) was ready, I went down first. Proper etiquette at the bath is to dip water, soap, and rinse yourself before entering the steaming pool. As I sat naked at the edge of the pool scrubbing myself, the little room girl came in to offer to massage my back. She had no sooner left than another girl entered to offer me more soap, and a third came to see if I needed a towel. By the time the third girl appeared I realized what was happening. We were so far out of the way that they had never seen a naked white man, let alone a red haired devil, as I learned I had been labeled, so their natural curiosity prompted each girl in the hotel to seek some excuse for viewing. When I returned to the room I remained silent about this and Smitty was next.

Smitty was an MD whose hobby was birds and he had come along for the ride. A few minutes later he returned, squatted on the tatami before the table loaded with food that had been delivered in his absence. Somewhat shyly, even a little indignantly, he asked, "Did the girls come in to help you?" Amid laughter we compared notes to find that they had done the same with him as with me. A flaxen blonde and a red head in the same evening! What a rare treat! To top off our amusement, Smitty, who, as a medical doctor, was used to looking at other naked beings during medical exams, had been embarrassed by all of this scrutiny from the local fishermen's daughters. Naturally Kuroda did not get such attention for he was old stuff.

A fishing fleet had come in and the fishermen were celebrating their safe return home with a good catch, having a sake party in one of the larger rooms beneath us. As our room was above this banquet we could hear the singing and shouting. The evening wore on and as the consumption of sake accumulated, the party became even more boisterous. Kuroda, who could understand the temper of their yelling and singing, became quite concerned for they were aware of the jeep and knew that Americans were in the hotel; and decided to come in and throw us out.

There was a concerted shout and they began clumping up the stairs. We heard a hurried rustling up the back stairs leading to the kitchen and the patter of our room girl as she hurried down the hall to confront the sailors at the head of the stairs. In no uncertain terms she told them that we were guests of the inn and they were being rude and ungentlemenly. The rebellion collapsed!

They trundled down the stairs, struck up a song, and went homeward

along the beach. They had to pass the jeep parked upon the sand, a symbol of their frustration, but no one thought to disturb it. After all, it was the property of someone else.

This was the only time in eleven years that I was confronted. Once Jiro Kikkawa and I drove into a little town and sought an inn. The inn keeper would not let us stay for he said that the townspeople were pro-communist and he did not want trouble. Not even were the massive demonstrations in Tokyo directed toward individuals and I was always hailed by the marchers when they saw me. In the great May Day riots and disturbance of 1953 upon returning from a field trip in a Weapons Carrier, we drove through the assembled throng without being attacked. When "Go Home Yankee" demonstrations became more active in later years, Jeannette, who is a red head like me, was visiting us. We had taken her to Kamakura and were at the temple as a vast column of marchers chanting and waving anti-American banners came up the boulevard before the shrine. We retreated into a tea house, but Jeannette, fresh from college and America, wanted to see what was going on. Taking her camera she went into the street and the marchers stopped to call to her and to have their pictures taken. A chorus of "herros" (hellos), smiles, and waving flags greeted her as she photographed them.

In the spring following the Moonbeam Inn incident, Kuroda and I again made the trip to the tip of Kyushu to see if we could find migrating birds arriving from the tropics. Evening found us on the side of the active volcano, Mt. Kirishima. Kuroda knew of a famous Inn and hot bath there where we obtained a room. The baths were immense; a great room with hot water gushing from gargoyles along the walls, pools of graceful shapes and different temperatures, and over all a heavy mist from cool air that swept the room. He and I bathed and as we returned to our room, bus loads of high school aged teens pouring into the inn. Dressing rooms at such o-furos are separate, but the pools coeducational. I wanted to return to see how the youths and girls acted in the pools, but was embarrassed by what Kuroda would think of me and did not learn what to a westerner would have been an interesting observation.

That a country which enjoyed public baths for centuries should put walls down the centers of all of their lovely pools in metropolitan areas has created many ridiculous situations. Before this era of enlightenment, men and women bathed unconcernedly together, exercising a proper etiquette of privacy. Now men pay to see a naked woman!

It was in the back streets of Asakusa in Tokyo behind the great temple where, in 1957, we came across a strip-tease show priced at 20 yen (6*). It had a false front of wood, but the "auditorium" was a tent over bare ground with no chairs. The audience of men stood before a raised, about waist high, stage. On it what appeared to be farm girls earning their rice came from the wings, spoke a piece, took off their kimonos, and walked off. No finesse, only an undraping. (Sans brassiers, but pantied.)

In front of the stage was a large tank, like an oversized fish tank, which contained steaming hot water. Finally the star of the show came on, dressed in a bath robe. She went to the tank and tested the water with her fingers,

returned to the wing, brought out a bucket of cold water, and proceeded to pour it into the tank. Satisfied with the result she removed her robe, climbed down into the tank, and bathed. In the etiquette of bathing in public it is proper to hold a small towel, a *tenugui*, in front of your ~~private~~ parts, which she did as she descended into the tank.

Yoshii and I were standing among the small crowd and beside him was a little man peering at the tank on tip toes. He spoke to Yoshii, who began to chuckle, and I prodded him to learn what was funny. "Did you hear what he said?" Yoshii asked. "No!" He said that the water was cleaner yesterday and you could see more!"

After seeing a Tokyo strip act, a friend of mine said, "Sex is not a spectator sport!" But it certainly is one to enjoy reminiscing about. I've already mentioned some of the cute things that happened. One year Yoshii and I were in Noboribetsu in Hokkaido. Mineral waters heated by an active volcano supply the city's numerous hot baths with steaming pools. I wanted to experience one of these baths. It was afternoon and I always wish that I had not checked my camera, but then I couldn't have used it anyway.

From the lockers where you left your clothes, behind steaming glass, you entered a great low ceiling, glass overed area of gleaming white tile and gracefully shaped pools. The temperature of each pool was different. The place was not crowded, only a few bathers at each pool. A woman here was scrubbing a child, another was bathing, a man was in one pool, several men in others. From the walls gushed fountains of warm water in which you could luxuriate. Holding my towel properly so as not to be indecent, I explored the room. As I approached one side near a wall of fountains, two young women threaded their way between the pools toward me. They stopped before me to ask how I liked the onzen and Hokkaido. My pale white skin, always a curiosity, was interesting them as much as their beautiful bodies were interesting me. One girl was exquisite, beautiful, clear, lightly bronzed skin, full teenaged breasts virgin tipped with pink, a classical face, long gleaming black hair, graceful arms and legs. Hers was one of the most beautiful bodies I have ever seen. They smiled and entered a pool and I walked away feeling privileged to have seen such perfection uninhibited by sham.

The Nishigeki at Yurakucho in Tokyo displays some beautiful bodies too, but you are rarely as close to them as to this girl in the onzen. On one occasion the star of the show was an artificial blond, but with a beautiful body which she displayed in a real pert and artful strip-tease. It was clever and saucy and she too was perfection. Apparently of mixed blood.

Complete nudity in shows was frowned upon in Tokyo, but in Hokkaido the villages also had strip-tease shows and these left nothing to the imagination.

Yoshii was indisposed that night, but I went. This was a full fifteen years after the first trip to Noboribetsu, and oddly enough we were back in the same city. There was a little strip show off of a side street. It had a small stage, canned music, one spot light for effects, and a few chairs.

The cast consisted of three girls. First, a very young one, possible teenaged, Japanese, came in fully clothed in a kimono and danced. Following

her was a taller Korean woman with black agate eyes. She danced and stripped to the waist. The third girl was the product of an American GI and a Japanese. She also stripped to the waist. By this time there was a number of summer kimono clad boys in from the universities of Tokyo and Sapporo.

The girls returned; the first one still did not strip, but ~~the~~ Korean girl became naked. The small, perfectly hemispherical breasts, with pink nipples, of a woman who had not yet borne a child, and a straight, clean limbed body. Her pubic hair was that of a pure mongoloid, as well as her skin color and all other features, a dense columnn of long black hair bordering the lips of the vagina and extending upon the mons pubis. She walked the length of the ramp and back.

The star of the evening was the Eurasian girl and the boys began calling "take it off" as soon as she entered. This time she gleamed naked before them. Cream colored body, full breasts of a caucasian, a somewhat heavier body, and the public hair of a caucasoid, a patch of short curly black hair which covered the mons pubis extending across it beneath the naval. She then proceeded to give the boys who crowded up against the stage, which was little more than waist high, a lesson in female anatomy. Writhing and dancing, pushing their hands away (Don't handle the merchandise!), she exposed her labia maxima, but, in dull colored lights radiating from the one spot which was not conducive to close observation. The finale was with her squatted on the ramp when suddenly bright lights glowed beneath her. This all sounds a bit sordid, but the yelling, good natured boys, the obvious pleasure that she got out of the lesson in anatomy, made it extremely funny and made this particular show one in which there was "spectator sport".

All through the years Yoshii watched my interest in naked ladies with critical reserve. I am still not sure but I think he got a kick out of seeing me enjoy the nudes whenever I could spot one. His approach, attitude, was somewhat like the psychologist who looks at everyone else when a nude walks into the room. A bare bosom has always been a source of delight to me and in the old days Japanese girls and women, especially the elder women, did not wear brassieres. They wore kimonos more often, especially the light summer kimono. When in leaning forward, as the graceful introductory bow, with such light clothing she almost always exposed the beautiful, hemispherical, oriental breast. Shoe shine girls, waitresses, lovely women shoppers, often revealed their charms to my prying eyes. Nursing babies in public, on the train, the ~~in~~ shop, at the beach~~s~~, was common practice and a lovely brown, milk-filled breast is a thing of beauty. Beautiful girls before open windows in their open homes combed their hair before their vanity mirrors, their kimonos cast off to the waist, farm women worked bare breasted, fisherman's wives and daughters worked at the nets with only a short skirt about their hips, diving girls gathered pearls or seaweed wearing naught but a g-string and goggles. Yes, it was a country for the connoisseur of bosoms. Once a farm woman was walking in a field at a distance from me. I was scanning the fields and nearby trees with my binoculars for birds, but came to rest on her as she flung her work clothes from her and was revealed as she adjusted and reclothed herself. And there was a Thai beauty bathing in a stream in Thailand. The women of Southeast Asia

rarely bathe free of sarongs and such was the case along a stream in Leyte (Philippines). I was in a forest on a hillside above the stream when three young women walked into it beneath me. Standing in calf deep water two of the women helped the third unroll the mass of hair piled upon her lovely head. It trailed down her back and flowed into the water. It was the longest and most beautiful head of hair that I had ever seen. It took the combined effort of the three girls to wash it, comb, and replace it, and then they went into deeper water for their bath, and I returned to my bird watching.

But to get back to Yoshii. He and I would stay at local inns when we were on junkets about the country and I would watch the entrance to the women's baths for glimpses of my favorite subject when not viewing birds. One evening we were in a hotel high on a hillside overlooking a gorge. The bath houses were down at the stream level beneath us where hot water from a nearby volcano was available. I was on the balcony at my old trick of watching the scene with my binoculars. Somewhat disgustedly Yoshii said, "We have a word in Japanese for that!" I laughed and said, "So do we! We call it Peeping Toms!"

But he got revenge one night. There was a group of us at an inn and we were housed in a wing of it. Closely adjacent were other rooms and after I was sound asleep Yoshii noted that a young couple were enjoying love in a lighted room across the area way. He awakened everyone but me to enjoy the scene.

I have to tell this one about myself. We were at the oft mentioned inn on Miyakejima and the small bath house was out in a garden behind it. I was in there alone one morning taking a shower when one of the shapely hostesses came out to water the flowers and shrubbery. She came into the o-furo to fill her buckets from a faucet near by me. In her presence my self control failed me and I sustained an erection which she pointedly ignored and went on into the garden while I grabbed my towel and fled.

We were in Bali. I have talked with people who have derated the beauty of Balinese women, but I say that they are either unobservant or are poor connoisseurs of the subject. The Balinese women like the Dyaks and Dusun of Borneo or the Malays, all of the same small, brown racial stocks, have beautiful bodies. Especially from the waist up. Their legs may be short and heavy and their feet large from heavy work, but they cover these with exquisite sarongs of batik. They know that they have beautiful skin and beautiful torsos. The Borneo aborigines go bare breasted for convenience and because of the heat. Hinduism does not deter the Balinese woman from self exposure, Mohammedanism frowns upon it. The lovely Malay girl, prevented from the freedom of her Borneo or Bali sisters, uses subterfuge. She wears the batik skirt to cover her legs and the prescribed blouse, but it is of sheerest texture beneath which she accentuated her charms with a ~~barrier~~ ^{series} of flaming colors.

So I am on an ornithological survey in Bali, to see what species are present and how many of each (relative populations). We stopped at a famous open bath where fresh water poured from ornate spouts of red volcanic rock into crystalline pools. Sukarno, who was an even more ardent girl watcher than I, was reputed to have a suite of rooms equipped with binoculars in an inn above the pools, from which he could enjoy the bathing beauties. As I walked

near the pools there was a lovely lass performing her ab●olution and I almost forgot to get my camera into action.

In spite of legal restrictions supposed to be imposed by an unappreciative government, bare bosoms of all sizes, ages, and shapes were about this lovely land! And it is a beautiful island! Plam trees, towering mountains, mosaics of emerald rice fields, and temples with exquisitely designed gateways across the land. And the lovely swaying women carrying a multitude of objects on their heads, baskets of fruit, piles of batik, all manner of merchandise. About my roadside tally? During a week and over 635 kilometers of roads traversing fields and farmyards, I tallied 1,368 birds and 800 bare-breasted babes (my BBB count), 1.2 lovelies per kilometer. What luxury!

By now you have me classed as a lecherous, dirty old man, a dirty young man who never grew up. Of course I resist this category because I am a ~~B~~biologist. My first love was entomology. Then came the love of birds and the two fused, but as my knowledge about nature widened it also ramified into ecology, the study of the whole. I have become completely absorbed by th many facets of biology and among these are the fact●s, the enigmas, the almost unlimited parameter●s of human sensuality and sexuality. This is often categorized under the broad but meaningless term of culture. Being an animal among animals I have had to approach the ramifications of the human animal with interest and with humor. Hence these stories revealing my own sensuality as well as that of others.

19. Asian Culture



In these modern times we hear stories concerning the crass commercialism of Japan and the great increase in crime in Tokyo, but Tokyo with all its smog, gigantism, and hurry is still a wonderful place. I'll never forget one of my first weekends in 1950. In those days there was no smog and it was a great sprawling, incomprehensible city. You could buy a ten yen ticket and board a train going in any direction. Finding a likely place that you wanted to explore, when you left the station

an attendant would charge you the few yen additional fare above the ten yen that you had already invested. It was late afternoon and I saw something that caught my eye. Off at the next station I began wandering through the crowded narrow streets lined with fascinating shops and oriental treasures that I could not resist. The clip-clop of wooden ghetas gradually lessened as the crowd dispersed homeward and the sky was growing dark. I found myself in an unlighted street lined by wooden walls and by shuttered unpainted buildings through crevices of which an occasional thread of light filtered from the 25 watt bulbs swinging in the center of the rooms behind. I became a little uneasy. Alone in the darkened streets of a city of seven million, not speaking the language, I could be mugged at any moment. Then I heard a child laugh and a woman singing. I was in a residential district, these were people's homes, and I proceeded with no fear to an illuminated sign pointing to a nearby station.

It was 25 years later. Tokyo was still a sprawling, seething city now of many millions more. Lucy and I got off at Shinagawa Station, the intersection of a vast maze of electric tram lines, and were carried along by the stream of evening home-goers pouring forth from the station while above us Tokyo Tower tried to penetrate the smog. We walked on, the crowd gradually thinning as people turned to their destinations. Alone except for a woman walking ahead of us, I noticed a bright light gleam from her hand as she swung along. Again it sparkled in the one fluorescent street light above us, a great solitaire diamond she was wearing on her finger. She turned into a dark alley and as we hesitated a second to watch, the diamond continued to pour forth its fire in the fading street light even as she disappeared into the darkness. Yes, Tokyo was still safe and unbelievable!

With so many GI's present, prostitution was rampant in the early fifties and the girls were organized into unions or guilds. These gave them protection. Much military payment certificates (MPC) changed hands between GI's and the girls and this was exchanged for yen at the guild headquarters. As it was illegal and dangerous to possess MPC, it found its way back into military hands through black market dealings.

The GI's working on my staff enjoyed the girls and one evening one lad

had with him 150,000 yen, more than \$400, which was payment for a car that he had sold. Under the influence of sake at a party with several other GI's and girls, he waved this wad of bills and wondered how he could get it into MPC. One of the girls took it from his hand with a smile and disappeared. The rest of the boys laughed and shouted at him that was one way to spend \$400. In less than an hour the girl was back and counted out the exact amount of MPC to him.

In 1950 Japan was still on her knees and trying to struggle to her feet. There was still some begging on the streets, but more evident was the shoe shining or some small thing for sale. As I approached my office early one Monday morning I was accosted by two children who came from different directions, both with small cards in English attached to their clothing informing the perspective donor that their parents were out of work and needed money. Both children, a little girl of about eight, and a younger boy, were clean and dressed as carefully as their mothers could do. They were unrelated. It so happened that I had not cashed dollars for yen over the weekend and I had, to my chagrin, only a ten yen piece in my pocket. This I attempted to explain to the older child. I gave her the ten yen and she immediately took five yen from her pocket and gave it to the little boy as they departed.

In contrast to this is the begging in India. In 1968 I was stopping at a village to watch a camel draw water with the circular water wheel of antiquity. As I halted the car I was immediately surrounded by crowding, pushing, dirty children, begging and jostling for baksheesh. I had several coins in my pocket and began passing them around. As usual in this country of privation there is never enough to go around. You could divest yourself of your entire wealth amid such a crowd and not save the life of one starving child, there were so many. Before me among those that had received nothing was a little girl with the expressive eyes of a wild thing, who had been shoved aside by the others. I placed a coin in her extended hand, but before she could close her fingers about it an older boy knocked her aside, grabbed the coin from her hand, and fled. Such maltreatment brought no outcry or tears from her. This was the way life was supposed to be! The scene has haunted me these many years and affected my attitude about Indians ever since. Respect for others is a national characteristic in Japan. Seemingly not so in India!

During our years of exploring Japan, Chet Southam, a medical officer, was assigned to our virus research unit. He was a tall man, well over six feet, towering above my 5 ft. 8 in., and typical of tall men he stooped a little when conversing with normal mortals. He liked to accompany me as we travelled the countryside studying birds and their relationships to Japanese encephalitis. We both had the curiosity of tourists and made a Mutt-and-Jeff pair, a strange sight in the eyes of the Japanese. Each evening at any inn after supper Yoshii would

enjoy reading or a quiet game of chess with other guests while Chet and I would explore the village. One evening in a remote part of Japan, in a village the name of which I have long forgotten, we rounded a corner and a hurrying Japanese man almost bumped into us. He halted and beginning at ground level he scanned the doctor to his lofty crown. Exclaiming "Hambun" he turned and went chuckling on his way. It was so, Chet was nearly twice his height and his amazed comment had been, "I'm only half his size!"

Communication is a two sided coin. Everyone who has travelled in lands other than his own has found himself frustrated by assuming that what he is explaining to someone is understood by that person. We all forget that anyone straining to understand you in a foreign language will interpret what he thinks he hears in the light of his own experience and culture, and, most important of all, in what he thinks you want to know. Every American woman who is not used to servants has many funny stories to tell about her experiences with servants when she visits other parts of the world. Some of these can be tragic, but most bear retelling.

In the matter of communication we are all egocentric and laugh about how the other person misunderstood what we were saying. I often wonder about the peals of laughter in the homes of my Asian friends when they tell about the asinine things that I did because I misunderstood what they were trying to tell me.

The very use of the word "misunderstand" is dangerous, especially in Asia. To say bluntly to an Asian employee or friend, "Do you understand?" puts them on the spot. To admit that he doesn't understand you is a state of "lost face", some cultures even more than others. Because to admit lack of understanding connotes that in some way you are a lesser person, you had less education, that you are less capable, or that you are inferior. By such an admission the Asian loses face. So of course he is going to say yes, he understands. By so doing he saves face and he says to himself that he can go ask somebody else or work it out himself what he thinks you want and maybe get it right. The average American is intolerant of this approach and degrades into rage when the person he has carefully explained something to returns with it inadequately accomplished. The poor Asian then suffers a flailing or "bawling out" done in anger. He further loses face and he retreats still further into misunderstanding. The only short tempered person I ever saw get away with this was Colonel Bob Traub in Malaya. He ranted and raved at Malay, Indian, and Chinese alike. But they quickly learned that these tantrums were short-lived and that he was absolutely loyal to them and protected the interests of all the staff. Their reciprocal loyalty to him was unbelievable! Long after he had left a commanding officer and returned to the States I would be tramping through a forest or travelling up country on a dim road in a lab jeep when I would encounter some Chinese or Indian only to be asked, "Do you know Colonel Traub? He is a wonderful man!" One time he became irritated at me and cursed me with well chosen four letter epithets. Later, when he had

finished, one of the Chinese scientists eased up to me and apologized for him, saying that Bob didn't really mean those things.

Being a quick tempered red head, I too had to learn how to communicate without anger. I sympathized with my friends and employees because I knew that they were trying. Gradually through the years I hit upon a way of quizzing a person without making that person lose face. It was simply a matter of terminology, of using the right words. While explaining something to an employee, I would watch their eyes. Eyes reflect doubt very quickly as well as understanding. And then I would say, "Are you with me?" Never "Do you understand?" There was no stigma to "Are you with me?", no admission of inferiority, just a sense of equality. So the Asian would admit that he or she was or was not "with me." If "no", then we would go back over the details of what I wanted or was explaining until there was understanding.

The rest of this matter is just as important. If you have a good employee or a good friend and you ask him or her to do something, do not expect that person to do it "your way". Some things, such as laboratory tests, must be done a certain way and in a certain sequence and these you show by demonstration. You will be surprised how many ways other things can be done and the results be comparable, so yours is not the only way. I remember a young aeronautics advisor who was helping the Thais set up an airways. After two or three years of advice and showing, he gave up, saying, "They will never fly an airline!!" Yet Thai Air and International Airways is one of the best companies in south eastern Asia. They just did it another effective way. Yoshii was such a good natured man that he put up with my tirades for many years!

The difficulties of avoiding the problem of "losing face" is well illustrated by this little incident. In wondering where mosquitoes fit into the picture of avian/human diseases, we were interested in how high the mosquitoes flew and proportionately how many there would be of each species available to bite birds feeding in tree crowns or sleeping there. In a mangrove study plot where we had determined that 65 species of mosquitoes were present, we had stationed veteran Malay mosquito collectors at different heights in a tree. They were to collect for two hours early each day at ground level, at fifteen, and at thirty feet in the tree. They had been doing this for about six months, but since they were veterans at the process and I was busy with other projects, I did not immediately review their work. When I sat down to it, it became evident that something was wrong. The distribution of species and numbers of individuals at the three levels was not right. I sent one of the Malay entomologists to investigate what was taking place. He came back chuckling! The man at the top felt that because he was catching fewer mosquitoes, and he was a good collector, that he was losing face. Therefore, he spent part of his period on the ground in order to augment his take.

But to get back to stories about communication. In trying to explain culinary differences to our Chinese cook, Lucy told him that we did not usually have two starches at one meal, not rice and potatoes for example. Came the Christmas season and she prepared the menu for him; the usual turkey, cranberries, dressing, etc., and she said, "We will want sweet potatoes and mashed potatoes." He smiled and said yes, for he was an excellent cook and

knew all about these things. Lucy made it a point of never interfering in the kitchen anyway, unless the cook sought her advice or guidance. Came the gala day and guests had already arrived with good appetites when Lucy checked the table loaded with beautiful food. Among the items was a mashed up orange colored mess. She tasted it! It was mashed candied sweet potatoes. A quick check showed no mashed Irish potatoes. Of course this was as it should have been. You don't serve two starches at the same meal!! So the guests were treated to mashed sweet potatoes for Christmas dinner and no one knew but that this was another odd American custom. Later Lucy explained to Ah Foo that yes, you didn't serve two starches for a meal, but on special days like Christmas and Thanksgiving, it was permissible.

I like the story from a housewife whose Chinese cook made delicious pies and always decorated the crust with a scalloped edge. Serving pie one day, her guests were discussing the recipe and one asked how did the cook make such uniform scalloping around the edge of the pie crust. Not knowing herself, the hostess called him to in to demonstrate his technique. He smiling showed by removing his false teeth to roll around the edge of the pie. A nice scallop resulted.

Not all stories are related to Chinese cooks for French cooks are liable to such sport as well. This reminds me of a quip that "Happy is the man with a Japanese wife, an American house, and a Chinese cook!" The obverse is "Unhappy is the man with an American wife, a Japanese house, and a British cook!" This story relates to an American family in Paris when everything was rationed. The military attache at the American Embassy was permitted four pounds of butter a month. This month's ration had just been bought and was on hand when that attache's wife was having guests for a supper and had asked the cook to prepare certain delicacies among which were buttered potato cakes for which he was well known. The meal was a success and all of the guests commented upon the richness and quality of the buttered potato cakes. Next morning the attache requested butter for his toast and was informed that there was none. Further inquiry revealed that the cook had used the entire month's supply in preparing those delicious potato cakes.

This story sounds like it was figmented, but I know the lady to whom it happened. She was the wife of an American ambassador in a tropical country. Being an excellent entertainer and having a good cook she was well known for her original and pleasing dinners. To relieve the pressures of his office duties, the ambassador played tennis. Tennis balls in the tropics deteriorate rapidly and lose their resiliency so the ambassador put a canister of new ones in the refrigerator to protect them.

It was one of their first social events after they had assumed this new post and the wife was not yet completely acquainted with the cook's capabilities. So she told him to prepare some tasty soup of a local recipe and left the matter up to him. The guests were seated at the long shining table illuminated by flickering candles from polished candelabra when the first course, the special soup, was brought in by a servant bearing a beautiful silver tureen. Filled to the brim was his tasty concoction on which floated six, soggy tennis balls. It turned out that the cook had never seen a tennis ball and

because the master had put them in the refrigerator they must be good to eat so he decorated his fine soup with them.

Speaking of soup, we had Tungsu, a drinking cook, in Thailand. She kept her alcoholic interests in hand, until we had guests. Then the stress of preparing for them would get to her. By the time the guests would arrive she would be in a glow and feeling no pain. After each car was admitted to the garden she would swing the heavy wooden gate back, riding upon it as it closed. As I usually carved and served the other items at the table, the soup serving was always the most dangerous. She would sway in with each brim full bowl and all conversation would fade as the guest watched with bated breath until each bowl had been precariously placed on the plates before them. Somehow she never did spill one!

Culinary crises can arise at home without the misunderstanding of a cook. It was during our navy days in the war years. A young lieutenant from heavy overseas duty in the Pacific had been assigned to my entomology unit at Mare Island in California. He was having a birthday and we had invited guests. The commissary had provided Lucy with a colorful chocolate birthday cake decorated with white icing, pink roses, and "Happy Birthday". It is tradition in our family not to show the birthday cake until the moment of lighting and gift giving, after the meal had been finished. Lucy had hidden the cake in a small pantry in the kitchen. The meal was over and the happy guests were enjoying their coffee when Lucy went to the kitchen to prepare the cake with candles, etc. I glance up and she was motioning to me from the kitchen door. She took me to the pantry door and opened it. There before me was the beautiful, rose decorated, white cake, only it was black with ants. And a column to a crevice in the wall was renewing the horde as they partook of our birthday cake. "What can we do? The cake is ruined!" "No, we will use strategy!" Lucy was the smoker of the family. I removed the cake to another serving plate as she lighted up, then had her blow cigarette smoke upon the throng. She puffed and blew until she began to get a little green and the ants fled. A beautiful demonstration of the power of nicotine. I was a little sorry that other entomologists could not see such a splendid example. The cake gradually became white again, only there were still ants imbedded in the hearts of the sugar flowers. "Don't worry," I said, "in the excitement of blowing out the candles and cutting the cake no one will notice the ants and as quickly as the cake is cut, the chocolate crumbs will look like and mask the ants anyway." The action was a success and no one knew of the disaster in the kitchen!

It never pays to speak in a derogatory manner in a foreign country for a vast number of people also know English. It happened to me in reverse, much to my amusement.

I was driving in Tokyo in the old Pontiac which I had had in the field and on wet gravel roads and it was filthy. Mud spattered it from bumper to bumper.

Stopped at a red light, a Japanese woman and small child approached to

cross the street. The child looked at the car and said, "Kitanai desu, ne!" (Very dirty, isn't it?) Just then the light changed and as I pulled away I said, "Hai, kitanai desu!" (Yes, it is dirty!) to the consternation of the child's mother who shook the child for being so rude and exclaimed, "Wakarismashita!" (He understood!)

Japanese is a very dynamic language and, like English, if you can't think of the proper word, make up a combination and you will probably be understood.

I entered a hardware store to buy some sandpaper, having sought the word in my dictionary, but forgotten it. As the shop keeper approached, I looked about, not seeing the sandpaper. At a loss what to ask for I made up a word by combining the words for sand and paper, "Sune-kami arimasu-ka?" (Sand and paper, do you have?) He was non-plussed and I tried again to no avail. By that time I had seen some on a shelf and indicated that it was what I was seeking. After purchasing it I asked, "Kore-wa, nihongo, non desu-ka?" (In Japanese what is this called?) To which he replied, "Kore-wa sandpaper desu!"

The Japanese have seen so many indifferent Americans that they say an American will not speak their language, eat their food, or use their toilets. Since I do all three I was always somewhat of an anomaly to them.

For years I traded regularly at an insect shop in Shibuya in Tokyo where all kinds of collectors' supplies were sold. One afternoon I was browsing and buying and asking about things. A Japanese customer was watching. Finally he spoke to the proprietress in Japanese which he did not think I would understand so well, "What is he, German?" To which she replied, "No, I think he is French?" And me a red headed Irishman!

I was on a train in Japan sharing a compartment with four Japanese business men who were engaged in animated conversation. My understanding of Japanese was not sufficient to follow their discussion, but they were talking about numbers. Finally my curiosity overcame my courtesy and I asked them what they were talking about. "Golf" was the answer! They were comparing scores at holes on their favorite courses.

They smiled at my Japanese, which was often the case when I talked with Japanese men. My language was what they called "Bedroom Japanese" since most American men learn it from pretty Japanese girls. Male vocabulary is different from that of a female. Also, I was speaking Tokyo-go, a Tokyo dialect which is understood across the land. Each region has its idioms and inflections. For example: "Let us go now" is "ikimasho" in Tokyo, but in Saitama province it is "ikube!"

Traveling in Tokyo and vicinity was and is an experience. It has the most efficient surface and subway traffic of any city. No home is hardly more than a few blocks from street car, railway, subway, or bus. A circle route connects all of the subsections of the city and handles about four million people each day. That commuting passengers are crowded into these cars is well known and subject to stories.

Two girls were standing face to face, jammed together in the morning express. One said to the other, "Will you look over my shoulder and see if the

man behind me is good looking?" Her friend said, "He's young!" To which she replied, "I know he's young, but is he handsome?"

The girl was pushed in by the boarding crowd and stood before a seated young man. She stood for a few moments and said, "Would you give your seat to a pregnant woman?" He bounded up and replied, "Of course, lady!" As he clung swaying to the overhead strap, he kept eyeing her. Finally he asked, "How long have you been pregnant?" "About 30 minutes and am I tired!"

Overstuffed and overbearing American women sometimes board these Japanese trains. In this instance a couple of acquaintances of mine were hanging desperately to straps while Japanese men sat placidly reading their newspapers and books.

In loud, shrill voices they berated the ungentlemanly manners of these men and went on to cuss Japan in general. Finally, at an approaching station, the man in front of them got to his feet and went to the door. Before he stepped out he turned to them, bowed, and said, "I am sorry that you do not like Japan any better than you do."

Some people collect signs that mix up English. Such may be malapropos, misusage, bad grammar, etc. You can find them in any country, especially English speaking ones, and they are always worth a smile. Such as:

**DANGER
WILD ANIMALS
KEEP OUT**

about which you wonder why it is dangerous for wild animals.

One at Khao Yai National Park in Thailand asked the picnickers, "Please keep cleaning." This sign should really be in every park.

In the early post war days, Japanese shop keepers wished to put English signs in their windows. One tailor approached me saying that he wished to call his shop "The Sincere Tailor Shop" but his sign read "Sincerely Tailor". It took some explaining of adverbs and adjectives to clarify this for him.

On the Ginza was a small women's lingerie shop with a sign some wag had helped the proprietor make. It read, "Lady's pants and tit holders".

Although this one was grammatically correct, it was a bit startling. At Hama Park in downtown Tokyo there was an exhibition of telephones, radio, telegraph, and other means of communication. The sign at the gate boldly declared in foot high letters, "Exhibition of International Intercourse".

The Nichigeki theatre at Yurakucho in Tokyo was a center for strip shows for twenty-five or more years. Their production advertisements were often gems. One read, "Don't touch my throbbing bra!"

Communism was making its thrust in Japan to create unrest and to oust the Americans. Early in 1950 they tried one approach that failed. The Emperor was to visit a community and inspect its factories. This was considered a feted occasion and the town was dressed up, even the factory workers wearing colorful kimonos at the machines and posts. But the night before the Emperor was to arrive, communist agitators painted slogans on walls and tacked posters

to utility poles. Townspeople awakened to find their city desecrated, an insult to the emperor, and they were appalled. Immediately everyone set to work and cleaned away all, leaving the place again respectable for the imperial visit.

In 1951 they organized a great rally on the grounds adjoining the royal palace. Early in the morning Yoshii and I, with Watanuki driving the weapons carrier, threaded the throng that was gathering here and drove to Asaka, west of the city, for a day of bird study. When we returned in the afternoon the throng had been inflamed by several hours of speeches and was beginning to disperse destructively. Yoshii saw it first and said, "Trouble ahead!" and Watanuki turned down a side street to the lab in Yurakucho. We unloaded, Watanuki went to the motorpool, Yoshii took a train home, and I left in my dirty and much dented Pontiac. The crowds surged from the palace grounds toward central Ginza damaging and walking over parked cars, some of which belonged to our staff.

The thrust of the outbreak was "Yankee, go home" and criticism of the government. Police broke up the demonstration (there were many orderly ones in later years) and later in the week inspectors came to assay car damage and to authorize payment for repair. Seeing mine parked in front of the office they wanted to list it for repair as well, but I assured them that it looked that way normally and was not present when the demonstrators passed.

This one is on me. We were doing a study of an Open-billed Stork colony a few miles north of Bangkok. Each week we set up nets for two days and captured the birds that lived in the same grove where the storks were nesting. Our objective was to learn what effect the colony had on other bird species. The concentration of feces and urates in the soil killed or burned some of the trees and shrubs which regenerated when the storks were absent and flooding from the Chao Phya River cleansed the soil. The question that we were exploring was, did other birds avoid the area or show any physiological effects from the concentration of ammonia, etc.

Each captured bird was put into a cloth bag and brought to a small shelter where a numbered ring was put on a leg, a blood sample was taken, and the bird was examined for ectoparasites, weighed, and measured. When all of this had been recorded the indignant bird was released.

This particular colony was at a Buddhist Temple called Wat Phai Lom (pronounced Wat Pie Loam). The colony would have long since been destroyed by meat and egg collectors if it had not been under the protection of the priest at the Wat. Later the location was made a National Wildlife Reserve to protect it further.

Being a famous tourist place and a well known temple, people came here and there were many religious ceremonies and processions. Occasionally we would find ourselves working when a religious procession would approach and then we would be the objects of considerable curiosity. I was, of course, the only westerner in the group, since my assistants were all young Thai scientists. One day a ceremonial procession arrived. It was spearheaded by a particularly

aggressive woman who, dancing and chanting, led the group to the temple for proper offerings and consideration of the priests. On their way back from the temple she stopped her procession to watch. My assistants attempted to explain to her and her throng what I was doing. She was not impressed. Her attitude toward such biological activity was, as she expressed it, that which I have found the world over. She said as she turned to dance and sway her devotees away, "Do you have nothing better to do than this?"

As a foreigner you rarely realize how closely your host country scrutinized you. It was early in my career in Japan and Yoshii and I were in the back country. As evening approached, we entered a small town with an inn and I suggested that we stop there. Our hostess was the teenaged daughter of the proprietor. It was more than a year later when we happened to be in the same area, and as we approached the inn I asked, "Isn't this the inn where we stayed last time we were here?" Yoshii agreed, so we stopped again. We had changed clothing, bathed, and the room was prepared for our evening meal. The young lady was older and prettier but still the proprietor's daughter. My Japanese wasn't all that good, so I lost track of the rapid conversation between her and Yoshii. Suddenly he asked, "Did you hear what she said?" To my "No", he answered, "She said that you use your chopsticks much better than you did the last time you were here!"

In the beautiful gardens of Japan you will note that long slender bridges spanning graceful ponds often have a sharp angled turn in the center. Such bridges are evident in China and in Chinese dominated countries as well. Your first impression is that such bends in the bridges are evidence of the grace of Asiatic architecture. It goes far beyond that, back to the concept of evil spirits. The Chinese pantheon of deities and demons includes a host of evil spirits which can swoop down upon you. However, they can travel only in straight lines. So you must prepare cul-de-sacs for them so as to protect yourself. Hence paths have abrupt turns and bridges have angles in them. Much of Japanese culture springs from China, proscribing that the bridges in their beautiful gardens have angles and turns.

We were on the train from Singapore to Bangkok having boarded it at Alor Star. The McClure family was on an outing for a change, all four of us. Jeanette had come from Indiana to visit us and we had driven from Kuala Lumpur to Penang to see the sights there and then on to Alor Star. Here we had enjoyed a good steak supper at a Chinese hotel with the usual rock hard beds and indifferent plumbing (for a cost of less than \$3 apiece) and waving goodbye to our driver, Rudy, who was to take the car back to Kuala Lumpur, we boarded the train, loaded with luggage and with bags of fruit and lunches. We stowed the luggage beneath the seats and the bags on the rack above.

Across from us was a Chinese family also loaded with luggage, which

appeared to consist mainly of large bundles of cloth and batik. As the train approached the Malaya-Thailand border, we settled in for the all day trip to Bangkok. Near the border customs officials boarded the train and began examining our packages for contraband or dutiable items. To the rear of our car an uproar began; loud yelling and protestations by a Chinese lady as she was confronted by the officials. Apparently she was with those across from us and as the officials confiscated the bundles that she had there were further protestations from the others. In all of the noisy melee the officials remained calm and examined their bundles of cloth, confiscating them. We got the impression that this was not an unusual situation and that the officials knew these people and were pointedly looking for something.

Before going on to the other cars, they pointed to the bags of fruit and lunches on the rack and asked if they were ours, which we assured them they were. At the border stop things calmed down a little, but the Chinese family still appeared to be in great distress as if they had lost their life savings.

Past the border the train and passengers settled for the long trip north. The Chinese family no longer seemed to be in distress. One of the ladies smiled and excused herself as she took one of the paper bags from our rack. The group then quietly and surreptitiously took small packages from the bag and secreted them in their pocket books and hand bags. We looked again and the remainder of the bags still contained our fruit and lunches. The train slowed to a halt at a small way station and the Chinese family, all smiles, quickly assembled and departed. We had been had! Unbeknownst to us we were accomplices to a drug or jewel smuggling. They had known that in the confusion and uproar that they were creating we would not take the time to count our food containers when asked. Clever!

The Santhia was a freight-passenger vessel plying the China Seas and in June of 1958 we were aboard it on our way from Japan to Singapore and Malaya. Among the passengers was a pearl merchant. The pearl industry, natural pearls that is, is so permeated with graft, smuggling, and intrigue, that a pearl merchant is automatically considered a crook. This interesting person operated a fleet of pearl divers in the seas off the coasts of New Guinea and Indonesia and he was so persona-non-gratis that each time we entered a port they took his passports and papers and would not let him off of the ship. As related earlier, the Santhia was in bad standing anyway, since she had been a victim of gold smuggling.

Smuggling and piracy in these seas of the Sunda Shelf are still a way of life. Like gangland in New York, it is worth your life not to be in the right gang when sailing the waters between Zamboanga, Mindanao, and the islands of the Sulu Sea.

We were driving along the mountain trails near Mt. Kinabalu in Sabah (North Borneo), Malaysia, and I kept seeing small shrine-like houses on poles by the roadside. The little platform had canopies of carved or plain wood and within them were bananas, papaya, rambutans, or other fruit or vegetable

offerings.

I remarked about these shrines to my Bornean companion and asked what they were for. "They are not shrines," he said, "they are stores!" We could see occasional clumps of houses of Land Dyaks living on the distant hillsides. They raise more food than they need and wish to sell some so they walk to the nearest road or trail where they have placed these little covered platforms and put fruit and vegetables into them for sale. Anyone passing by and seeing something that they wish to buy can stop, select what they want, and leave the money on the platform, or exchange a fruit for a fruit. Everyone knows the value of things, so there is no need to barter. In the evening, the "shop" owner returns to it and collects the day's "Receipts" and any left over produce. Theft was no problem.

Remember the good old days when you left the money on the corner news stand when picking up the paper?

In 1983 I again drove to the forests of Kinabalu, this time along a graded black-top highway, the surrounding environs of which had been scoured by civilization. No more distant hillside clusters of Land Dyak homes, no more little shrine-shops along the roadside. Now the highway was bordered by squalid huts housing families appearing far from happy with the new order!

It was in the summer and there was a medical conference in Tokyo attended by a number of virologists from the USSR. With them was a woman who spoke English and acted as their interpreter, guardian, and watchdog. Following the conference, in company of virologists from the 406th Medical General Laboratory as well as from the Japanese National Institute of Health, we took a bus load of our USSR visitors up country to show them the study areas, methods, farmlands, pilot pigs, etc.

There are bus stops, toilet, and refreshment accommodations throughout Honshu, much like the big truck stops in America, and we stopped at one to let all relieve themselves. While we were there several bus loads of Japanese tourists pulled up and middle aged to elderly farmers, all in summer kimonos with color and insignia denoting their village of origin, dissembled. Several of us, including the woman virologist and some of her colleagues, were standing by our bus watching these happy, garrulous people descend upon the toilets, cookies, cakes, drinks, and candy. I had noted that our guests had eyed the candy and not bought any so I bought several bars and had offered pieces to them, which they ate avidly.

Their interpreter asked who were these people from the buses. I explained that the Japanese love to travel and plan such excursions each year. Among the farmers there were cooperative farming efforts and groups met regularly to plan the year's crops. Each farmer had a duty assigned to him; one would plant the rice seed beds of a certain variety, another would provide help for planting, a third would be in charge of fertilizer or pesticides, and so on. Over much tea and many evenings of discussion this was all programmed with the beautiful results that the virologists were seeing as we drove through the

countryside.

An while this is going on, they also plan a holiday excursion for the year. The families involved who want to go begin saving toward that end. The women decide on the color or style of the summer kimonos, and other matters. The way the savings is accomplished is unique, one I have not seen elsewhere. They have small boxes of many compartments each with a slot in the side and each with the family's name. Once a week these boxes are passed from family to family and each put money in their respective cubby holes. Someone notes and banks these and by excursion time enough has been accumulated.

By the time I had explained all of this, the interpreter was much impressed and she said, "I didn't know that Japanese farmers practices collective farming!" To which I replied, "I didn't say collective farming! This is cooperative farming!" After a moments thought she said, "There is a difference, isn't there!?"

Japan has important holidays on alternate months, important because they are the source of much enjoyment, both family and public: January 1, the New Year celebration, temple visiting and gift giving; March 3, Boys Day to honor the sons of the family; May 5, Girls Day to honor girls with special doll exhibits; July 7, the opening of summer and the Sumida River. This was by far the largest and most exciting celebration of the season. The Sumida River which flows through the heart of Tokyo was traditionally the site of inns, tea and geisha houses, and focus for river excursions. Recreation facilities lines its banks on both sides and in July the season of excursions and recreation was officially opened. Every tea and Geisha House was fully booked months in advance, bleachers and grand stands were built for more than a mile on the river banks, house and building tops and any open place, and every roof top was rented out to revelers. Barges were pulled to the center of the river and spaced for the full length from Tokyo Bay to Asakusa. From these would be presented the most fantastic of all fireworks displays. The tradition extends back into the 17th century.

Comes the eventful day and one to two million people assemble along the river, including the McClures and their friends, to eat sushi, drink sake, and marvel at the display which began in mid-afternoon and lasted until after 10 p.m., the sky never free of exploding pyrotechnics. We had the rooftop of a favored inn which we rented each year, along with other revelers and spectators. It was the most spectacular of celebrations and the acme of summer.

I am a typical American tourist. Usually so covered with camera cases, binoculars, tape recorders, etc., that I can hardly move. In the forest I am a spectacle, Jungle boots, topi, and all this gear hanging on me. In Khao Yai National Park I was trying to look at, photograph, and tape record all at once and looking around I found that a bus load of tourists had stopped to take

motion pictures of this horrible example.

But once in Korea I met a man who was travelling "light". It was at the Seoul airport. I noticed that he was in shirt sleeves and that he was carrying nothing, not even a note book in his shirt pocket, only a boarding pass and he was pacing the lounge. To strike up a conversation and because of the difference in our "barang", I said, "You believe in travelling light!" He glared at me. "Anything to get out of this country! All I want and all I need is the boarding pass! Just so the plane is not delayed! All I want is to get out of this country!"

It turned out that he was an American electrical engineer who had been sent to Korea to set up and put into operation a large hydroelectric power plant to furnish some city with power. The frustrations had finally gotten to him. Inefficiency, unskilled labor, conflicts of ideas, and thievery. They had even stolen the heavy duty wire sent to carry the power and had replaced it with wire that burned out under the load. Nothing operated as it should have. The plants capacity was lowered. He just couldn't take it. "All I want is to get out of this g-d place!"

One day in a moment of frustration, Yoshii said, "I keep trying to understand western thought, but I find it very difficult!" Years of practice have made me feel that I can understand the Asian mind, but then events will pop up which make me doubt it. Take for example the Thais attitude toward insurance, which may spring from Chinese attitudes of the inevitable. The western mind hates to accept the inevitable which is the obvious path to the eastern mind. Most Thai's wear images of Buddha or sacred disciples, saints, to protect them, sometimes a whole string of these will encircle a neck. My young assistant had hers which she wore to protect her from accident. I cautioned her to be careful when walking across Bangkok streets entangled with a mass of erratic drivers, scurrying motorcycles, and assorted other vehicles. But I am protected she said, and my brash western remark (based on disbelief) was, "Well, give your little protector some help and be careful when you cross the street."

But to get back to insurance, at first, drivers in Bangkok were required to have automobile accident insurance, but this not only failed to avert accidents, it increased them. If you had insurance you needn't bother about careful driving. Eventually the requirement was overlooked. Accident were reduced when they made it mandatory for the person accused of causing the accident to pay for the other man's repair bills as well as his own. Therefore, only the occasional native driver had insurance, but it was required of the westerner, making him the target of every driver.

My young assistant, Somtrakul, was westernized so she had insurance. Making a sudden stop one afternoon to avoid a vagrant truck, the man tailgating her, as is the custom in Thailand, couldn't negotiate the stop and smashed into the back of her car. Damage was light to both vehicles, but enough to demand a settlement. Somtrakul was furious, turning to a nearby cop

who had seen the accident and protesting that obviously it was the fault of the tailgating driver since he couldn't control his car.

The policeman requested their driver's licenses, which they both had, and then asked the offender for insurance papers. The driver had none. Somtrakul produced hers. This was sufficient for the policeman. He booked her as cause of the accident and she had to pay. His response to her complaint of injustice was, "But you have the insurance!"

We as Christians are prone to expect a similar morality from societies in the tradition of other religious ethics. Trying to impose our ethics on the developing countries of other cultures has led to continuous frustrations on the parts of both parties. I like the story told to me by an Army Major who in the early 50's was inspecting equipment which had been parceled out in our "lend lease" program. He was sent to Cambodia to inspect material on loan there. At one small base, up country from Phenom Pengh, he met the captain in charge and among the items he was to inspect were six "6 by" trucks (heavy duty three ton trucks). There were only three in the motor pool. As a routine question he asked the captain where the other three were. The conversation was something like this. "Where are the other three trucks?" "They are not here!" "Yes, I see that, but where have you assigned them?" "Oh! I didn't assign them, I sold them!" In consternation, "You sold them?" "Yes!" "What did you do with the money?" "I built my house!" In a state of shock, for here was a young captain admitting to the theft and sale of government property for money for personal use, the major informed the captain that he was sorry but this was a federal offense and he would have to put him on report to the general down in Phenom Pengh. This didn't seem to disturb the captain as much as it did the major.

In Phenom Pengh the major confronted the general. "Sir, I am very sorry to have to report that I found a discrepancy at the supply camp and must call your attention to the Actions of Captain So and So in charge there." The general raised an eyebrow with an "Oh?" "Yes, the U.S. government issued six 6-by trucks to the supply officer, but there are only three left." "What happened to the others?" "The Captain sold them!" "He did? What did he do with the money?" "He bought himself a house!" The next question was not the one that the major had anticipated. "Well, did he need six trucks?" I don't know. I didn't ask him." "Obviously he didn't need three trucks and he did need a house. So he sold the trucks and bought a house. I don't see where the problem lies." At which the major retreated in frustration.

This line of reasoning which is so typically Asian often leaves a westerner gasping. The individual in most Asian cultures stands for more than does the community. We look at society as more important and that the individual should be secondary for the good of all.

Knowing this line of reasoning, I was determined to avoid such a pitfall wherever possible. In the MAPS program I assigned grants to support field research and tied as few strings to the grants as possible. Basically the funds

were to support bird banders in the field and for the costs of the field trips. Small gratuities were for the senior scientist. After five years one of these scientists who had been performing excellent work and who had been using his funds for field work and salaries, proudly took me to see his new home. In enthusiasm for his home he said, "If it hadn't been for MAPS, I wouldn't have a house!" There went those trucks again!

In Bangkok a motorist friend of mine got into a little scrape with a motorcyclist. The motorcycle was slightly damaged, but the rider unhurt. He had dashed through a red light in front of the car causing the accident. The American was a bit wrathful, but was trying to be cautious. The policeman who had seen the accident came over and asked the American for his ID card, driver's license, and insurance papers. He had first asked the motorcyclist if he was hurt. "But it was his fault," the American said. "He ran through the red light and in front of me!" The cop admitted to this. Then he asked the cyclist for his license. He had none. The American said, "OK, then he is wrong on three counts, reckless driving, running through a red light, and driving without a license!" The policeman carried on further discussion in Thai with the cyclist and said to the American, "He has no license because he is too young to have a license." Aghast and furious, the American shouted, "Then he is wrong on four accounts!" The policeman looked at him sadly as if trying to explain something simple to a child. "But you don't understand. He is too young to have a license." So he booked the American for the accident.

Possibly this reveals similar cultural thinking. One year Yoshii mentioned to me that he found Christianity very interesting because of the way people acted and thought that he would study it some. Months later I asked how his study of Christianity was coming along. His observation was one that would affront many of the devout. "It has fine ethical principles, but I cannot believe in the mythology!" Sometime later I handed Jeannette, who was a teenager and active in her church, a treatise on Buddhism. After reading it her remark was, "It is interesting, but I couldn't believe in the mythology!" Who is to judge?

We were away for several weeks and Palm (Payom) our lovely and efficient house keeper and cook (number one as they were called) maintained the premises while we were missing. When we returned we asked about happenings while we were gone. Oh! Nothing had happened while we were

[1954: Studies in avian malaria in vectors and hosts of encephalitis in Kern County, CA. 1. Infections in avian hosts. Am. Jour. of Trop. Med. & Hyg. 3 (C.M. Herman, W.C. Reeves, H.E. McClure, E.M. French, and W. McD. Hammon); An unusual migration of birds at Tokyo, Japan. Wilson Bull. 67. 1995: Studies on mites as vectors of western equine and St. Louis encephalitis viruses in California, Am. Jour. of Trop. Med. & Hyg. 4 (W.C. Reeves, W. McD. Hammon, W.H. Doetschman, H.E. McClure and G. Sather); Techniques for taking blood samples from living birds. Jour. Wildlife Mangt., 19 (H.E. McClure and R. Cedenno); Sex and age ratios of some Japanese birds. Wilson Bull 67; Bird ringing - avocation and hobby. Malayan Nature Jour. 10. 1956: Methods of bird netting in Japan applicable to wildlife management problems. Bird-banding 27; Waterfowl reaction to an earthquake. The Auk, 73; Protecting grain fields in Japan from pilferage by birds. Jour. Wildlife Mangt., 20. 1957: Merlin attacks Brown-eared Bulbuls. The Auk, 74; The arrival of continental migrants in western Japan. The Auk, 74.]

away, except the robbers. We were aghast and quickly looked about to see what was missing.

Our home off Sukumvit Road and across from the Manhattan Hotel was a typical tropical bungalow, in a garden behind walls. It was protected from the street by a brick wall surmounted with rusting barbed wire and entered through a gateway provided with a heavy wooden gate. At the back and to one side was a shallow pond which was part of the neighbors garden and separated from our servant's quarters by a high, corrugated, iron fence. Our street was soi 15 and two streets east, but not in numerical sequence, was soi 21.

A police car carrying two prisoners was moving along soi 21 and had to halt as it entered Sukumvit. As it slowed for the stop the prisoners broke loose, jumped from the car, and dashed into the adjacent gardens. Climbing fences and plunging through the gardens, they entered one large home, but the pursuing officers ferreted them out and they ran on through further gardens toward our place.

Palm was standing at the stove in the house when she saw one of the men, wet from wading the pond, climb the metal fence, and head for the back door. Grabbing a heavy skillet, she met him at the door prepared to do battle. "What are you? Robber?" she screamed. "No!" he yelled as he turned to dash around the corner of the house toward the front. The second prisoner, plunging through the water, scaled the fence, and followed the first when he was the skillet wielding Palm.

Reaching the front gate, the first soaking escapee climbed over it and accosted taxi drivers loitering before the hotel. These drivers were all friends of my wife for they regularly drove for her, and Lucy's guests usually did not leave via the top of the gate. By now a crowd was gathering.

In the meantime, Palm turned to see a dripping, gun wielding policeman clamber over the fence and she yelled, "They went that-a-way!" or its equivalent in Thai, while a second soaked minion of the law sprang from the fence. Dashing around the house they too scaled the unlocked wooden gate and apprehended the two now held by the taxi drivers.

Oh! They weren't robbers! They were wanted for murder!

Katey Buri, a dynamic conservationist of Thailand, won't mind my telling these stories about her. They are really meant to illustrate the male ego of Asians (and elsewhere) and his guarding of his masculinity.

Realizing that the main problem in the world today, controlling all efforts at conservation, social and economic development, is overpopulation of human beings, she offered to do something about it. To a church group she offered to give them land, a church, a school, and a hospital, if they would find one thousand young men willing to be sterilized by a vasectomy. And she gave them 5 years in which to do so. As the five years wore away no young men came forward in the city of Bangkok and the church lost its land and buildings.

Katey owned rice lands near Bangkok and one day she caught trespassers dumping raw sewage into one of her fields. These were employees of a septic

tank cleaning company. On Sunday when the plant was closed they would borrow (it was not considered stealing) a pump truck, drain septic tanks at bargain prices, take the waste to some field outside of the city, and dump it; no thought given to sanitation, only to pocket money. Katey was on a tractor, plowing, and she approached these men as they watched the nauseous fluid flow onto her rice field. Threatening them with her pistol, (which she carried in a hideaway holster), she said, "If I catch you doing this again I will shoot you! But I will not shoot to kill, only to injure. Then I'll have you taken to a hospital where the doctors can patch you up and sterilize you with a vasectomy as well!" The men blanched at the thought and there were no further depredations.

20. Taxis



Unless you are being met at an airport or a dock often the first impression that you receive of a new country is that which revolves around the first taxi driver who is your inadvertent host. One in Australia was an American emigre who was talkative and a little homesick. One in London was very helpful and after finding the right station to get me to the Whipsnade Zoo, turned to me as we arrived and said, "I hope that you have as pleasant a visit to London as I did when

I went to America!"

Sometimes you get taken even if an old hand at the game. Lucy and I had been to Singapore many times, yet one morning we were accosted by cab drivers as we left the early morning train from Kuala Lumpur. We were uncertain as to the direction and distance of the hotel at which we wished to stay and the assembled drivers all assured us that it was a long way. Concurring in their agreement that this was so and that the fare required was a fair one. In many countries the cabbies prefer to bargain for fares and not to depend upon their meters, for they must pay percentages from the meters to their companies, but more importantly, Americans are not good at bargaining and usually fail in it miserably. Upon the advice of the combined drivers we settled for \$5.00 Malaya, about \$1.66 U.S. We quickly reached the hotel, a fifty cent run by meter, having been overcharged by a thousand percent.

But in Bangkok in 1954 Chet Southam and I were booked at the Princess Hotel. There was a young trishaw driver at the door who had selected this hotel as his center of operations. (Twenty years later he was still posted at this door.) Chet was tall and lanky and I was a bulky 175 pounds so we practically overflowed his trishaw, but he pedaled valiantly and took us to see some of the temples for which Bangkok is justly famous and proud. His name was Sam.

Later these trishaws were banned and trishaw operators were given the opportunity to buy land up country or to buy cabs at a low interest. Sam bought a cab. Each time that we visited Bangkok we had Sam take us to our destinations or for sight seeing. In 1970 he was still a cabby at the Princess door seeking customers to escort in his battered old car which he still polished rigorously. Through the years we often sent friends to him, but these are other stories.

We like Bangkok because of Sam and because of another incident. It was again this visit with Chet Southam. We had a day to spare enroute from Kuala Lumpur to Tokyo, Sam was occupied, and it was Saturday and as we stood before the closed main post office where we had gone futilely for stamps a middle aged man spoke to us.

He asked if we were tourists and would we like to see more of Bangkok and Thailand. Chet looked down at me and I looked up at him and we signaled that we thought we could handle this character. We expressed an interest and inquired of the price. Oh, no price! He would just take us in his car to see

Nakorn Phathom (which was 40 miles away). He had a new Studebaker coupe and Chet put me in the rumble seat. We whizzed over a good gravel road with almost no traffic (no jammed, alternately two and four lanes, nearly bumper to bumper) and I saw my first Swallow Plovers. They were sweeping above the rice stubblefields.

The day was superb. A visit to the crumbling ruins of the great chedi at Nakorn Phathom (now rebuilt), a look at the countryside and an excellent supper in Bangkok. Low Kuang Yung was a rich Thai importer/exporter and taking tourists to see his beloved city was his hobby.

Six years later he again hosted us in Bangkok, this time my family and I, and he took care of Jeannette because the times of her return flight to the U.S. and our train departure to Malaya did not coincide. That was the time we met the wine drinking priest at Kota Bharu. Hey! That is another story!

Not all taxi drivers are thieves and cutthroats, liars, and brigands, as one experienced in New York would begin to believe.

I was headed for Teheran, Iran, a few days after the six day war when suddenly Pan-Am was not permitted to land there and Teheran bound passengers were dumped off at Karachi. I had heard numerous tales of the horrors of Karachi, but such rarely effect my preconceptions. We were placed in the Karachi International and had a day to wait for an Iranian plane to take us on the Teheran. It was early morning and the immigration officer had scared the daylights out of me by holding my passport in sight and asking, "What do you think of the six day war?" in such a way that he was concerned about which side I was on. I had been in the back country of Taiwan when the war occurred and had heard nothing of it until returning to Bangkok. So my knowledge of the issues involved was next to nothing. All I could do was smile and make a non-committal answer hoping that such an answer would bring the release of my passport. It did!

Most of the disgruntled passengers went to bed, but life is too short for sleeping and here was a new country, a new environment. I asked for a car for all day. Sun up had just passed and it was too early for a driver. I whiled away the hour until 0700 when he was to appear by wandering through the boulevards in the neighborhood of the hotel seeing Rufous Treepies and other birds new to me. The driver was a tourist bureau product, passable English; show people the points of interest.

We raced down a road outside of the city (taxi drivers have notoriously heavy feet) and I saw a bird in the desert scrub. Screaming "Stop!" finally brought the careening vehicle to a halt and he looked askance as I dashed into the desert to gaze at the bird through my beat up binoculars. A few minutes further on I called another halt for a bird on a wire.

It dawned on the driver that here was a new kind of nut who wanted to see birds, so for the remainder of the day he took me to places where he thought there might be birds as well as showing me some of the tombs and ruins. For ten hours we had a wonderful time. Many birds including the pheasant-tailed Jacana were new to me; we had lunch together in a little shop; we explored a reservoir, and saw a round up of camels. I like West Pakistan because of this driver.

On to Teheran I stopped for a night or two at the Sina Hotel which was still housing American and European refugees from the six day war. The flight to Shiraz passed along snow capped mountains (it was June) but beneath the snow line there was no vegetation, no greenness. Thousands of years of deforestation had destroyed the ecosystems and water flowed underground to be tapped in the desert by wells.

The taxi system in Shiraz was unique in my experience. Although there was other surface transportation, people seemed to prefer the fleets of taxis that cruised by. If you wanted service you yelled your destination at the passing drivers. A negative response was a raise of the chin, positive a nod. In this way the cabby loaded his vehicle with people going to the same general area. If your destination was at a distance you might stand for some time before receiving a nod. The price was six rials anywhere in the city; rate of exchange - 7.5 rials per dollar.

A young British biologist, Lindon Corvalis, was teaching at Pahlavi University and doing some bird banding, using British rings. He and I spent three days birding near Shiraz using his old unlicensed Land Rover. It was unlicensed as it had entered the country duty free and been handed from Englishman to Englishman. The current tax on it at the moment was the equivalent of the cost of a new vehicle, requiring that Corvalis use back country trails to avoid the gendarmes.

The effect of thousands of years of abuse to this environment by goats and man was a barren desert with some desert shrubs and stark stone hills. The several lakes that we visited were salt, probably fresh pleistocene lakes before the hills and watersheds were denuded. Springs from the 2 to 30 inch winter rains still flowed at the edges of the lakes to which Sand Grouse, egrets, and other repaired for water. Sand Grouse resemble both pigeons and partridges and watching them was like focusing your binoculars back forty-five million years to Eocene birds with a similar fusion of columbid and gallinaceous characters, ancestors of those present families. They were dipping their breast feathers in water then flying off to desert nests where the moisture prevented eggs from desiccating.

The villages were of sun-baked bricks of the clay washed from surrounding hills and were of the same color. The homes had clay floors in which were set tile pipes to carry heat from charcoal fires in burners at the outside. As we walked about or drove through such villages I kept seeing black sparrows. They looked like the worldwide House Sparrow, but were black, almost to the exclusion of their patterns. The genus *Passer* is widespread and numerous, but I knew of no black ones, and queried Cornwallis about them. "Oh!" was the reply. "The householders store charcoal beneath their houses and these House Sparrows roost among the charcoal to avoid the cold!" No wonder *Passer domesticus* is the world's most ubiquitous urban dweller.

A day at Persepolis transported us back to civilization when the hills still had open forests, there was water and greenery in the land, and men had the energy and ambition to build stupendous edifices. Man the builder: Karnak, Parthenon, Angkor, Coliseum, Borobudur, Chitzen Ita, Ayuthia, Persepolis - a long list of glory in decay.

Everyone has suffered the experience of being taken in by taxi drivers, some good, some bad, some intentional, some unanticipated.

In 1950 the Tokyo taxis were still old cars with carburetor altered to handle fumes from distilled charcoal, and a firebox in the trunk to distill the fuel. We called them coal burners! When the taxi slowed up or stopped the driver would hasten to the rear to stir up the fire and soon you could hear and feel the furnace behind your back. With fortitude you remained, apprehensively, until the driver grunted something incomprehensible and you took off again toward your destination.

When these steamers disappeared from the streets in 1951 and 1952 they were replaced by Datsuns and other locally made cars of as uncertain a performance. Lucy was in a cab dodging toward Shibuya one morning when the steering wheel came off of the steering post in the driver's hands. He managed to careen to a stop. Turned to her and said, "Car no good!", got out and hailed her another cab.

I was in New Delhi, India, and wanted to hire a cab for several days to take me to Bharatpur Sanctuary about 150 miles south and east. After some discussion about price per mile and fee for the driver we drove off. The road to Agra is excellent and he claimed knowledge of it, but he got lost and we wandered some before we made it to Bharatpur.

Two days later we started back. The trip was little more than three hours by proper route and I asked the driver if he now knew the way. He assured me that he did and I announced that I wanted to be in New Delhi before dark.

We picked up two hitch hikers and went across the deserts and hills of north central India. Four hours later we were in Jaipur and now much further from New Delhi that we had been. We reached New Delhi about 2200 having been on the road for more than eight hours to accomplish the three or four hour drive. Checking a map and the taxi's odometer I saw that we had gone around a triangle. By the odometer the wandering way to Bharatpur was 233 kilometers, but the return was 478 kilometers, 245 kilometers, or 147 miles out of the way and the driver was fighting mad when I refused to pay for the additional mileage. We had agreed on \$50 for the trip and that was all he received. Sorry about that!!

We all know the frustrations of driving in heavy traffic and in Asia the traffic is congested, helter skelter, and uninhibited. One morning at an immense intersection in Akasaka in Tokyo a taxi pulled into the left lane where he was to make a left turn. In my position I was in the adjacent lane. There was not much other traffic at that hour. It was not necessary for him to wait for a green light to make a left turn (driving is on the left here) but he must wait for a light to go ahead. He was in the wrong lane. Another taxi pulled up behind him. The driver waited a few seconds and blew his horn, but the first driver sat stubbornly. More horn, no move! The second driver calmly got out of his taxi, walked forward to the waiting car, and struck the first driver a resounding glow on the jaw. Then he returned to his cab. The lights changed and we all moved on. As beautiful a release of frustration as I ever saw.

21. Tea



When in the tropics and/or hiking through the forest, especially in areas where you are not sure of the water, you don't drink cold water, iced tea, or ice cold carbonated pop, you drink hot tea. Before embarking as a tour guide and biologist for a U.C.L.A. tour to Southeast Asia in 1983, I had an indoctrination briefing for the 25 participants, "But hot tea only makes you all the more hot!" they exclaimed. Cold drinks draw the blood to the intestinal tract by contracting the

peripheral blood vessels of the skin. This gives temporary relief from the surface heat, but the shock of cold liquids on the digestive system in the hot climate can cause nausea and diarrhea. Hot tea laced with sugar and/or cream quiets the stomach, dilates the peripheral blood vessels, and allows for the free flow of perspiration as well as replacing the energy that has been used in walking or climbing.

No one listened! We visited national parks and refuges in Sumatra, Malaya, and Borneo, and after each hike in the forest they would rush back to headquarters and flood themselves with cold beer, iced tea, or Pepsi, while I sat alone with a nice pot of hot tea. There were only four who were not agonized by diarrhea and cramps the whole trip and these occasionally shared my tea. When the others complained, I was a very unsympathetic nature director.

Water is where you can get it, just so long as it does not contain poisonous substances. In our many years of brush-bashing we used water from streams, seeps, marshes, buffalo-wallows, whatever. Just strain out the debris, bring to a good boil for a while and make your tea.

It was at the same jungle camp in rhino country in Malaya where we found the *Anopheles* mosquitoes that were not repelled by our repellent. At such camps, Soosi, who was my Tamil assistant, remained in camp to watch nearby bird nets and to keep the tea hot. We were using an old bamboo hut in a small clearing beside a swamp and water seeped from an embankment. Soosi used this water for the tea. In seeping through the soil and organic material the water not only changed color, but picked up many solutes. These colored the tea. Every pot full was of a different hue and shade, from purple to reddish brown. For years afterward in later camps Soosi would smile and refer to this rainbow tea when he prepared a new pot.

But just plain tea drinking in Japan is fun. Those of us whose experience is limited to Lipton's teabags have little appreciation of the tea shops. You have to experience them! Counters with dozens of varieties and flavors of tea from which you select any that you want and a kimono clad hostess steeps a sample so that you can taste it. Tea is placed before you in restaurants as water is in restaurants in America and refilled as often as you wish. In summer a tea is served which has a wheat base, I believe. It is called "mugi" and is supposed to be the refreshing hot weather drink, only I found it so bitter that Yoshii and

I always referred to it as "hemlock".

No business contract is complete unless over tea. Westerners are irked by this and I used to accuse the Japanese as dragging out the tea drinking process just as an irritant for the overbearing Americans. However, it isn't so, it is a matter of etiquette. You enter the vestibule of an officer or firm and a receptionist asks what you want or who you wish to see, seats you, pours tea for you, and then disappears to get your man. (With all this tea drinking and it being a diuretic, its no wonder that there are so many pissing posts along the way in Japan.) If the person you want to see is busy, you may nurse the tea for hours. And if he has to go up the chain of command to answer your questions or your needs, it becomes a bladder battle as each person comes in to greet you and then goes to the next higher up to notify him.

This brings to mind the time that we went to Miyakejima to get blood from school children. The party included a medical director, Jack Moyer, who was known by every child on the island, and myself. Our mission was to sample a school to see what percentage of the children had antibody to Japanese encephalitis virus and then to return to the school at the end of the mosquito and epidemic season to see how many more had developed the antibody but not been sick. It was a simple survey to determine the number of inapparent infections that could be expected during a summer. This trip was for the first blood letting. Asians in general do not like to give blood. They feel that it weakens them, therefore they are especially reticent about having children give blood.

Jack had selected a school, the operators of which he thought might be susceptible to the study. We entered and a teacher poured tea. As we sipped, the school principle came and we discussed the matter with him. He disappeared, more tea. Another gentleman appeared, the superintendent of the school district. We explained to him our needs. He disappeared, more tea. Time passed. Time continued to pass! More tea! The teacher bowed embarrassedly as more time and tea passed. The morning waned and they brought us a snack. Finally after literally hours and kettles of tea we were ushered into a meeting room where seated at a long table was a group of people, both men and women. The superintendent had called in the PTA. (Parent Teachers Association, in case you have forgotten). These two leaders, the principle and superintendent and their assistants (I forgot to mention that each head man always has a flotilla of assistants so it is always a group that greets you) considered our request so important, but so serious, that they had called in the parents. We wanted ten cc of blood from each child. They permitted one cc after much discussion and more tea and finally decided to permit the study, provided there was no coercion and that the children were volunteers. We met 25 volunteers the next morning, all ages and gave them each an American candy bar for their one cc of blood. And, oh yes, several of these children already had antibody to Japanese encephalitis, none were sick during the summer, and one developed antibody after she had an inapparent infection.

I suppose this story belongs with those about tea since tea is a diuretic. In the tropics, kidney stones are a problem and you are urged to drink lots of

tea. Military men can have a ribald sense of humor and this Navy Chief was no exception. He was having urinary trouble and was in the base hospital. A particularly abrasive nurse demanded each morning an early urine specimen in a small bottle given to him the night before. One morning the breakfast tray held apple juice. This he poured into his specimen bottle. When the nurse arrived and snarled at him for his sample he produced it. But shamming anger at her, he yelled, "By God, I've had enough of your heckling. I might as well recycle this," and he drank it down before she could move. Shaken and ashen she retreated and the ward had its laugh for the day.

I think that the best tea story that I have ever heard is that of Dr. Marshall Laird of New Zealand, who I am sure will not resent my retelling since it is a favorite of his as well.

After World War II, when Malaya had been released from Japanese military control, the countryside was under communist guerilla attack. It was illegal to have food in your car if you were traveling from town to town. Towns were surrounded by wire with floodlights pointing out to create a lighted area around each. Aborigines had been moved from their hillside villages to places more easily protected. The objective of all of this was to starve the guerrillas out of the forests. British armored patrols traveled the roads to protect them from attack and travelers from ambush. They used efficient little armored vehicles on rubber tires and mounted with rapid firing small caliber cannons.

I visited Malaya in 1954 and saw these patrols, lighted villages and restrictions. But by the time we moved to Kuala Lumpur in 1958 the countryside was secure and we no longer saw these evidences of strife and insurrection. Marshall Laird had been at the University of Singapore after the war and this incident occurred some time before we arrived on the scene.

He and his wife had driven to Kuala Lumpur and were returning along the west coast highway, a trip that I made many times several years later. He had with them an American friend who considered himself something of a historian concerning wars in which America had been involved. He was regaling them with war stories when somewhere north of Malacca they rounded a bend and ran into a fire fight between a British patrol and guerillas. The cannons were booming at an unseen enemy in the forest and there was the rattle of machine gun fire.

Marshall applied the brakes and threw the car into reverse, to quickly back around a hill and out of the line of fire. As they waited wondering whether it was prudent to flee in either direction a young British officer strode around the hill, swagger stick and all. With the background of thundering guns, "I am very sorry to cause you this inconvenience," he apologized. "I think we shall have the situation under control in a few moments!"

"If you don't mind waiting I'll have the sergeant bring you some tea!" They smiled weakly and he turned back to his duties in the fight. A moment after he disappeared around the hill a sergeant appeared carrying a tray of teapot, cups and saucers, of china. He came up to their car, again apologized and served them tea. As they sat there speechless, quaking and sipping tea the cannonade continued.

They were about through their second cup when the sergeant and

lieutenant returned to collect the tea set and to assure them that they thought the situation was in hand and that they would lift the guns so that they could proceed on their journey. Marshall put the car in gear, crept around the hill and under the still smoking and red hot cannon barrels, and sped off toward Malacca. Such is the unshakability of the British.

Incidentally he likes to conclude the story, "and we heard no more war stories from the subdued American!"

Mt. Mihara, on the island of Oshima, one of the Seven Islands of Izu that reach out into the ocean from the mouth of Tokyo Bay was erupting in 1951. The glow of its fiery cone could be seen from Tokyo. Lucy and the girls had not yet come to Japan and I had friends among a group of hikers, skiers, and folk dancers. A party of us adventurous souls took the daily ship to Oshima which arrived at dawn after the usual rough passage, having slept with some twenty-five or thirty passengers on the deck of one cabin, to climb the shaking mountain. Explosions were occurring about every 20 seconds hurling fiery balls into the sky and smoke billowed over the sea. The new cone was to the south side of a much larger and older caldera whose floor of black ash had been ground to a fine black sand. For years it had been called the "Japanese Desert" and there had been a time when you could rent a camel for a ride over these black dunes. Now fiery, tinkling lava was pouring over an inner lip of the cone and was flowing into and covering the black desert. On the lip of this cone was a tea house built of blocks of volcanic schist. Tourists flocked here all year. You could hike across the desert and up this cone to the tea house where both tea and soft drinks were provided while you gazed over a wonderful panorama of volcano, sea and green islands. Now the scene was infernal and fantastic. Intensely hot lava flowed past the tea house on three sides and the roof was pelted with a constant spray of falling ash.

Each day water in kegs and containers was carried on the backs of workers, including the "dainty" hostesses that served the tea, up these steep slopes to provide water for the customers. We drank tea while the mountain thundered and flowed around us.

At sundown the Japanese all packed up and descended to the villages below and at the seaside. Only the more foolhardy American tourists stayed on, as well as a couple of Japanese volcanologists who were monitoring the eruption. There were about ten of us including several women and we tried to sleep either on table or bench tops or on the floor while ash pelted the roof, the mountain coughed and roared behind us and lava crept past us. We were up and down all night. The men went out on the slopes to relieve themselves and the girls behind the teahouse to a small obento (toilet) like tank.

A murky dawn broke. The shop keeper and her helpers were toiling up the slope with more water. We packed and hastened away. The girls found that they had been urinating in the tank which stored the water for the day's customers. (Postscript: a few days later the lava buried the teahouse anyway.)

While on the topic of tea. The tiger is revered in Southeast Asia for its

great strength and many parts of it carry strength to the user. For example, the canine teeth of a shot tiger are pulled and carved. They are carried as good talismen which offer strength and protection to their owners. This was another case of having an employee whom you think you have indoctrinated with the western concept of cause and effect. In Malaya one of my field people, a devout Muslim, had a young son. One day in the forest he found fresh droppings of a tiger. I found them too from time to time and examined them to check on the prey that had been eaten. It was amazing in the forests of Thailand how many bears the tigers had attacked. Anyway, my assistant took these turds (the proper name is scat) home and steeped them in boiling water. The resulting tea he fed to his young son to give him the strength of the tiger.

A drink that used to be a delicacy among the Thai was most interesting. In the forests are large walking stick insects. They are truly immense, measuring up to a foot or more in length and almost as big around as your little finger. These insects were captured and kept as pets. They are harmless creatures which feed entirely on leaves. When fed a certain kind of leaf, my notes fail me as to the species of tree, the peculiar ornate droppings that the insects pass can be steeped in boiling water and an aromatic tea results. Yes, I have drunk it and found it not unpalatable.

By now I may have spoiled your appetite for tea, but it is the nectar of Asia. Hesitate to drink water; it may not have been boiled, but always accept tea. It is the polite thing to do, and without it you will dehydrate rapidly.

Almost everywhere that it is served, except by the crass unsympathetic Americans, tea has become involved with ceremony and culture. In British Malaya there was morning tea, elevenses, and high tea. Morning tea was brought in at dawn, or the specified rising hour, by a house boy and included tea, a banana or other fruit, and maybe a couple of cookies (called biscuits). Elevenses was a mid-morning break for tea since lunch was not until 1300. High tea was served at about 1700 and included tea, fruit, and little sandwiches (cucumber sandwiches are excellent) for supper was not served until 2000 or later, often as late as 2200. But this late supper I couldn't take, because I was always up at or before dawn and in the field and needed the sleep. The British tea was black; much of it that was served was of flavorful varieties from the Cameron Highlands (Boh Tea). Tea should be made from leaves! How a tea bag is loathed! You can add cream and sugar as you desire either in the cup before or after the tea is poured. There is much discussion about which method produces the better tea.

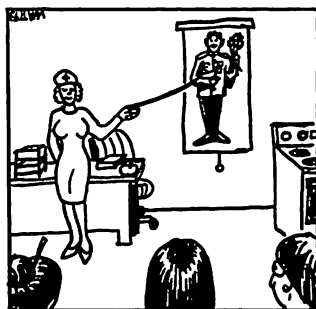
In the Chinese shops along the streets of Malaya tea is served two ways. It is pronounced "tay". You can get "tay" or "tay-o". "Tay-o" is plain black tea, but "tay" is a real delicacy for some palates. The tea is steeped to a deep mahogany, the leaves in a muslin bag over which boiling water is poured or the bag is dipped repeatedly into great kettles. The resulting brew is poured into a heavy porcelain cup or mug and laced with condensed milk (the sweetened kind which is of syrup consistency) until it is a creamy tan and more of a confection than a drink. A tremendous energy provider after tramping hot pavements, working in the rice fields or exploring the forests.

I am unaware of the origin of the custom, but in Taiwan tea is served

boiling hot in tall glasses or tumblers. You burn your fingers trying to drink the stuff. On the trains you find that at each seat beneath the window is a rack containing a clean glass for each occupant. After the train has left the station a cute hostess brings along a selection of tea bags, plain, orange, minted, spiced, etc., and you indicate your desire. She empties the bag into your glass and is followed by a man who fills the glass from a large copper kettle of boiling water. The tea leaves float, but gradually sink as they are saturated and by the time your glass cools enough that you can pick it up you can drink the luscious strong tea, only you have to strain the leaves through your teeth to prevent swallowing them.

There is less ceremony in tea drinking in Thailand, but you get the same sweetened milk tea there that you get in Malaya. The country of most tea culture and ceremony is Japan. Volumes have been written about it and it is a lifetime study.

22. *The Red Cross*



During my long tour, eight years, as ornithologist for the 406th Medical Laboratory, I out stayed several officers in charge of the virology department to which I was attached. The Troupial, Yoshii, our driver Watanuki, and I were permanent fixtures, but officers came and went. One was Dr. Chet Southam whose main interest was in oncology, the virology of cancer; a tall, good-natured man, who has featured in other stories here, and who spent as much time as he

could in the field with me, just for the ride.

In the spring of 1955 we made a tour of Singapore, Malaya, and Thailand to see what winter resident birds were present that might bring encephalitis to Japan. Some of this I have already related.

After World War II, a couple of American pilots bought some old planes and established an airline along the eastern coast of Asia. This became Cathay Pacific, one of the best airlines available and my favorite whenever I was headed for its ports-of-call. Chet and I took Cathay Pacific to Singapore.

Two hostesses were serving the customers, a slender Chinese, Jenny Wong, and a voluptuous Portuguese extraction, Linda Sena. I want the cute one, Chet noted, which left me with Jenny. During our conversations with them they learned that we had no hotel reservations in Singapore and we learned that the airline put them up at the Atomic Hotel. We would go there and they said that tomorrow was a holiday so they would show us some of Singapore.

The Atomic Hotel proved to be little more than a big bungalow in a residential area, a building that had been renovated into a small hotel. The accommodations were excellent! At dawn I was out walking the streets. Singapore was and still is lovely, streets shaded with tropical rain trees or acacia-like Golden-Rain. A gorgeous singer heralded the dawn and I couldn't rest until I had seen it; a thrush, black and white, and called the Magpie Robin whose range carried it from here through Malaysia and into Thailand. In Bangkok a male owned our garden and I followed his life for nine years, but now this species was new and intriguing. It has a repertoire of songs and improvisations nearly as spectacular as those of our somewhat similarly colored Mockingbird in America.

Yes, the girls did take us on a tour, to the Tiger Balm Gardens, a must for any tourist with imagination, and to the water front, now gone, and to a restaurant where they introduced us to delicious Chinese food.

For twenty more years whenever I rode Cathay Pacific I would ask hostesses, "Where is Jenny?" and she was often present, finally going up to office management, which she did not like as much as flying. I don't remember if she married any of the lotharios that boarded her flights.

When Lucy and the girls arrived in Tokyo 18 months after Ron and I (he had returned to college) we were issued what was known as a U.S. House (House 495). These houses were luxury homes that had survived the bombings and fires and commandeered for U.S. officers and their families. Like the laboratory train, these were part of reparations. It was a beautiful, modern two-story home of nine rooms and gardens and shade trees within protective walls. We enjoyed it for a year or two until such homes were returned to their owners and U.S. personnel and their families moved into housing areas. We went to Washington Heights, like an American suburban development, adjacent to Meiji Shrine and Park.

Lucy had become active in Red Cross work and was a Gray Lady in the large military hospital. General MacArthur's forces were driving the North Koreans north out of South Korea and thereby releasing American GI's held as prisoners of war. Those that were well were shipped home, but those that were ill or injured were brought to this hospital in Tokyo. There were wards full of them, unhappy, disconsolate, disillusioned, homesick. They appreciated the friendly ladies in Gray that wheeled loads of books, magazines, and refreshments into the wards for them. The boys had back pay coming to them as well as special awards, and all had been given considerable spending money.

Several that were well enough and ambulatory were given liberty passes and went to nearby downtown Tokyo to see the sights. They returned loaded with reversible jackets, watches, trinkets, jewelry, and flashy tourist items and stories of other things that they had not bought. They created an enthusiastic avalanche!

How could the rest of them obtain such things, could they send gifts home, how much did they cost, and on and on. The Gray Ladies were overwhelmed with requests. Immediately the Red Cross set up a buying system. The Gray Ladies made out lists of wants for each man and carefully deposited his money in an envelope.

Lucy and I were chronic shoppers. I had explored all of the art, crafts, book, gift, cloth shops, and tourist traps, and soon after Lucy had arrived she had found the china shops and department stores. So it fell upon us to do the buying for these war victims. There can be no other therapy as healing as the ability to buy things unless it is the return to home and loved ones. They could not get home, but they could buy.

There was a curio shop operated by brothers named Watanabe. They were Americans that had come to Japan before the war, been caught up in the Japanese draft and in serving in the Japanese military had lost their American citizenships. In my wanderings I had met them and knew their history. Lucy went to the PX with a long list of watches, cameras, and other items that were wanted, only to be confronted by an officer in charge who said that she could not buy in such quantities. Not intimidated she pulled rank on him with the hospital general's word and the PX opened its vaults. I went to the Watanabes and, upon hearing my story, they offered to supply all of the tourist items and trinkets at cost. I also knew of jewelry and pearl outlets. In this way we made the soldiers money go much further than had they been on a shopping spree themselves. For days extending into weeks we shopped. The desire swept like

fire through the hospital and new arrivals were caught up in it too. Each day I loaded my old Pontiac with purchases and delivered them to the hospital where the Gray Ladies carefully checked the lists, counted out the change coming to each, and then delivered the loot to each ward. I have never seen such spirits soar, boys carefully wrapping gifts and addressing them to wives, mothers, sisters, fathers, or having the Gray Ladies do so. Happily donning garish jackets, assembling billiard cues out of canes, photographing each other with their new cameras yelling and laughing.

We spent close to a hundred thousand dollars before the rush was over. For once Lucy and I could buy with abandon. A small item in the history of the Korean conflict, but scores of boys went home healthy in spirit and as healthy in body as modern medicine could provide.

Japan was rebuilding both her cities and her economy. The U.S. built a large and beautiful medical laboratory and a hospital near Zama where the army headquarters had slowly been moved. The lab and hospital were eventually to be turned over to Japanese medics. Washington Heights was abandoned and replaced by swimming pools and housing for the 1956 Olympics. We moved to Zama with the lab and gradually research projects wound down.

Japanese women are beautiful, talented, and intelligent. The U.S. Military frowned on what it termed "fraternizing" and were negative when homesick, love sick, or horny (take your pick) service men married the girls in occupied countries. And thousands of GI's found Japanese women irresistible. Cynics said that the girls were amenable only as an escape from Japan to America. In this viewpoint they were almost always wrong. The divorce rate among these interracial marriages was and is much lower than that of the U.S. society.

Finally the military hierarchy recognized the inevitable, sanctioned the marriages, and gave its support to a "Bride's School" set up by the American Red Cross. The wives of officers, enlisted men, and American civilians volunteered to teach the new brides or brides-to-be the amenities and vicissitudes of the American home and its cuisine.

Not only was Lucy chairman of the Gray Ladies at the Military Hospital, she was active in the "Bride's School" as well. The girls who applied for this training were divided into groups of five to ten and the American house wives opened their homes to them. There were six that came under Lucy's guidance. She, being a home economics major, had a wealth of information to give to them. How to make a bed, how to use an electric sweeper, how to operate a gas or electric stove and oven, menus to prepare, etc. In many instances these girls became lasting friends and we still exchange Christmas greetings with three of them.

All of these efforts did not go unrecognized and on 17 February 1956 Lucy received a commendation from the general in charge.

One of Lucy's friends, Laura, married an ex-Russian Count, Nick Egoroff, who was in the diplomatic corps in Japan. His father's estates had been in

southern Russia and after she told of Nick's heritage all of her "girl" friends kidded her about being a Countess. He and his father had escaped from Russia during the revolution. I sold him the old Pontiac for a dollar and warned him that the steering wheel was about to fall off. He wanted it only to drive to and from the local golf course at Zama. The steering wheel did come off in his hands as he left his home one morning!

MacArthur's forces were pushing the Communist Chinese back into North Korea and many Chinese soldiers had been captured. Intelligence believed that they were being trained by Russian officers, but the sullen prisoners would not answer to any questions. Knowing that Egoroff was Russian in origin, he was called in to interview them. First he was shown the arms that had been taken from them and to his amazement some were those that his father had issued to his soldiers during World War I. Russian nobility not only furnished the Czar with fighting men but issued the men their arms as well. The family coat-of-arms was etched on each gun and the Communists were supplying the Chinese with such ancient equipment.

The Japanese language is not replete with violent epithets or profanity as is English, nor is Chinese, but Russian is as descriptive and rough or more so than English. Suspecting that the captives had been trained by rough Russian sergeants or officers, Nick called them to attention in that language, using colorful and violent epithets. They snapped to attention and cowered before him answering his questions.

[1957: A study of summer bird populations near Tokyo, Japan. *Wilson Bull.*, 69; The occurrence of certain enterobacteriaceae in birds. *Am. Jour. Vet. Res.*, 18. (H.E. McClure, W.C. Eveland, Alice Kase). 1958: Wildlife conservation problems in Southeast Asia. A report on the Ninth Pacific Science Congress. *Jour. Wildlife Mgmt.*, 22. An avifaunal study in northern Hokkaido, Japan, *Tori*, 15; Bird migration in the Far East and its zoogeographical implications. *Proc. of the Centenary and Bicentenary Congress of Biology Singapore 1958*; Serological survey of Japanese B encephalitis virus infection in birds in Japan. *Amer. Jour. Hyg.* 67. (W. McD. Hammon, Gladys E. Sather, H.E. McClure). 1959: Dispersal of egrets on the Kanto Plain, Japan. *Wilson Bull.* 70; A method of determining age of nestling herons in Japan. *Condor*, 61. (H.E. McClure, M. Yoshii, Y. Okada, and W.F. Scherer); Immunologic studies of Japanese encephalitis virus in Japan. III Infection and antibody response in birds. *Jour. Immun.* 83. (E.L. Buescher, W.F. Scherer, M.Z. Rosenberg, H.E. McClure); Immunologic studies of Japanese encephalitis virus in Japan. IV: Maternal antibody in birds. *Jour. Immunology*, 93 (E.L. Buescher, W.F. Scherer, M.Z. Rosenberg, L.J. Kutner, H.E. McClure.)]

23. *Malaya*



Jeannette and Cam entered high school and were bussed to Yokohama, a two hour ride each day. And the GI's stationed at Zama became aware of the two red heads, filling our front room with laughter and happiness and emptying our refrigerator of Emiko's beautiful cakes and cookies. Jeannette graduated and returned to the United States to continue her education at Taylor University in Indiana.

A college colleague at the University of Illinois, Col. Robert Traub, was in charge of a field laboratory at Kuala Lumpur, Malaya and we were to be transferred there. Packers packed our nearly eight years of accumulations and we sought a ship for the trip south. We were disappointed until a state room showed up in a British cabin-freighter, the *Santhia*, going to Singapore. Other passengers had cancelled because the ship had been delayed in Bombay. We learned that our good luck had been caused by a malfunctioning toilet in one of the quarters. As the ship unloaded cargo, a plumber was called in to repair it and he found a bar of gold plugging the pipes. The ship was impounded and inspectors poured aboard. Someone was smuggling gold and had hidden the bars in the toilet mechanisms, the mission thwarted by the one that slipped and brought on the discovery. After some litigation the ship had been released and proceeded on to Japan where we boarded it at Yokohama.

It was a pleasant voyage made exciting as we passed through the Pescadores Channel between Taiwan and mainland China and entered the South China Sea. Immense British flags were draped both port and starboard and we travelled fully lighted each night with "God Save the Queen" blaring on our loud speakers. Chinese fighters visited us both day and night dipping their wings and leaving an atmosphere of insecurity as we sailed on. Docking at Singapore the immigration officials wanted our hotel reservations. We had none until I thought of the Atomic, about which the officials looked pained, but we spent the night there anyway, enjoying the mosquito net covered beds, morning tea, and the lovely residential setting. On to Kuala Lumpur Bob greeted us, but was dismayed to find that he had acquired an animal ecologist instead of an entomologist as he had known me before. As Ron and I had in Japan, we arrived in Malaya on the 4th of July, and I was finally going to get to explore the tropics, at the age of 48. We were assigned a beautiful government house in Kuala Lumpur and Cam entered the British school there. Later, to finish her high schooling in American history, she enrolled in the American school in Singapore. She had done so well in the British school that her teachers were sorry to see her go. When she explained to one that she had to have a year of American History to enter an American College, the teacher responded, "Is there that much?"

Upon arriving at Kuala Lumpur, we had been given a cottage at the government chalez for transients. It took several days for the bureaucracy to

assign us a house, which proved to be a lovely two-story brick and stucco at the edge of town on a half acre of lawns and orchid gardens and bordered by a rubber plantation (where our story about the monkeys took place). In the meantime we explored Kuala Lumpur and dined at the dining hall in the compound. There the head waiter, Ah Foo, decided that he wanted to work for Lucy and offered to be our cook. He and his wife fed us and maintained the house during our five years of occupancy, an excellent cook and family.

Kuala Lumpur was a beautiful city, modern but oriental in flavor with numerous lovely colonial cottages (British style bungalows rarely less than ten rooms) situated in expansive gardens. Streets lined with rain trees and palms and with moorish style government buildings facing the British Club, known as the "Dog" with its extensive lawns for cricket and soccer. The title "Dog" was inherited from one of the early colonial mesdames who brought her hunting dogs with her when she came to the Club, which must have been almost daily. Your membership was by invitation but never revoked even though you returned to your respective home country.

The U.S. Army Medical Research Unit (USAMRU) occupied an addition to the British Institute of Medical Research (IMR) a stolid organization that had been affronted by the noisy jeep driving Americans who had descended upon them a few years before.

Malaya is made up of 13 provinces, 12 of them sultanates, from which every five years the parliament selects a sultan to serve in Kuala Lumpur as King. Since KL is the capital city, each sultan has a palace for use when he and his retinue are present. None are as pretentious as the King's palace, but all are beautiful structures amid gardens. New Parliament buildings were built during our stay. Malayan stamps are fascinating because each denomination has a picture of a sultan on it, requiring 13 different stamp designs for each. A challenge to the collector to get them all. The Klang river flows through the city and a tributary, the Gombak, continues east into the mountains, along which we made many field studies and in a valley of which was my Tree platform (Chap.28). Other research locations included the Subang Forest which was destroyed to make room for the International Airport; and a coastal location of rubber, coconut and nipah palms bordering a second growth mangrove forest, Rantau Panjang, which was one of the most heavily studied areas in the country since IMR scientists had been utilizing it before the Americans came. We also became acquainted with the biologists and foresters of the Forestry Research Institute and the Rubber Research Institute, all of whom aided and abetted our own efforts.

It was in this melting pot (Shatterbelt by anthropologists) of Malay, Chinese, Indian, British and aborigines extractions and dialects (all speaking English as well) and Hindu, Muslim, Buddhist, Animist and Christian convictions that we enjoyed for five years and from which many of the stories here had their origins.

Malaya was only a year old as an independent nation, having received its freedom from Britain in 1957, and one of its primary efforts was bent toward education. A beautiful university was being built west of town. Dr. John Hendrickson who had been head of the department of biology at the University

of Singapore was asked to head and organize a biology department here which he did while the building was being completed. His professional interests were in frogs and other amphibians, which are mainly nocturnal. Occasionally he went with us on our expeditions into the forest and as he said, we made up two shifts. I met him coming in at dawn as I joined the birds and he met me as I returned at sundown. For night work, to free his hands, he wore a headlamp. Headlamps had changed considerably since Wes Gillum's episode in the mine in Illinois and were now powerful search lights operated from a backpack battery.

He told of an incident during an expedition in South America, Brazil I believe, where he and another naturalist were studying the nightlife of a marsh. They were wading across it into open water slowed by the floating vegetation and gradually deepening until it was at times at armpit. Each scanned the water ahead and around knowing that there were alligators in the marsh as well as other life.

Gradually they separated until they were some distance apart and were about midway of the pond when the partner slipped and dunked his light, shorting it out. John laughed and yelled to him that he would guide him out. Feeling his way along his foot touched a submerged log and he stepped upon it and over it. As his weight went onto the log it suddenly threshed up, throwing him over backward. Now both men stood lanternless in the deep, dark water in the full knowledge that a large and indignant alligator was with them. Terror descended upon them and they plunged toward the vague shoreline. The gator must have been as startled as they, for they reached shore safely.

24. *Believers*



Once while visiting the revered temples among the awe inspiring giant cryptomeria trees of Nikko, Japan, a place that I also greatly respect and enjoy, I picked up a bewildered looking matron and her daughter who were touring the place alone. As we went from temple to temple I explained the historical background and sanctity of each. They listened and I hoped were feeling an empathy with the beauty and reverence of the place. The mother asked me what I did, what my

occupation was. I returned, could she guess. And she ventured, "Missionary?" Does this mean that in the lay eyes only missionaries can understand and appreciate such things? I amazed her by, "No! Ornithologist!"

This is the story of a man who respected them all. It is a favorite story of Bob Traub. It was early in the fifties and Bob was mounting an expedition to the peak of Mt. Kinabalu in Sabah, Malaysia (North Borneo in those days) to study and collect the fauna along the way, mainly rats and their parasites. With the expedition was a Dyak head hunter guide who was to see them to the top and he professed not to be a head hunter but to be a Christian. The mountain, as are so many spectacular peaks, is a sacred mountain revered by the local tribes and the home of many spirits. To placate these spirits for this invasion of their privacy it was necessary to make sacrifices at prescribed sacrificial and sacred places along the way. The guide had with him several chickens for this purpose. At each enshrined locus he sacrificed one chicken. When they reached the top he had one chicken left. This he carefully took to the appointed place and sacrificed using his parang to slit its throat as was proper. Following this he stood up, bowed west to Mecca, and then crossed himself.

Certainly this was more admirable than the actions of two misguided Americans who ended up six months in jail in Thailand for climbing upon the head and shoulders of a sacred Buddhist image and taking pictures of each other doing so.

We were traveling along a side road in Malaya and noted a crowd at a small Hindu Temple. Realizing that a religious ceremony was in progress, we stopped to watch and possibly photograph it. The Indians in their colorful costumes were pleased that we were interested and complimented that we had joined them. One young man who spoke English disengaged himself from the crowd to act as our guide and interpreter. He explained that it was a religious ceremony of a local group who used this small temple. "But", he said, "of course I am Catholic". Like the man on Kinabalu he was taking no chances.

We saw this line of reasoning many times over. A railroad ran from Klang, near Kuala Lumpur, to Kuala Selangor and one day a spring mysteriously began to flow from between the rails. The local Bomoh (holy man) said that it was a miracle and was producing sacred and healing waters. Hindus and Malays both, but especially the Indians flocked to it to pray, to be

baptized, to drink the healing waters. Having an eye for business, the local priests began bottling the water in Coca Cola bottles that they could find, selling it for a Malay dollar (Straits dollar, 30 cents US at the time).

Our staff at the medical laboratories included many Indians and Tamils (Southern India peoples) and there was much talk about this miraculous healing spring. We westerners pooh-poohed it and were assured in our own minds that we had trained our people in microbiology and pragmatic research well enough that they would view the situation equally with suspicion. Not so! Bottles of the water began showing up at the lab where it was tested and had the usual quota of amoebic dysentery and other pathogens prevalent in such open springs. Later, the railroad maintenance crew came along and repaired a broken water line from which the spring sprang. Of course, you will remember that in the old Pullmans the toilets flushed directly onto the roadbed as the train rushed along.

Miracle of miracles, a rain tree in a Malayan village was weeping. Now rain trees often weep, that is where they get their name, drip from their new twigs or masses of flowers, but this was more so. It was a veritable shower and the sacred tears could be collected and bottled for sale. Priests declared the trees sacred, weeping for the sins of mankind. Holy men blessed the water and said that it was endowed with great powers. Thousands flocked there to pray, to anoint themselves and to buy and drink the holy water. As with the sacred spring authorities warned people away, but authorities are a callous lot and probably some of them bought the water, too. Newspapers held accounts of this miraculous event and its throngs of believers.

An entomologist friend of mine in Penang, seeing the news accounts, thought that he understood the situation and drove down country to view the tree. Sure enough it was pure entomology! A host of sap-sucking insects similar to small cicadas infested the tree and their droppings were the holy rain. As he reported acidly, "the beknighted believers were drinking bug urine!"

Speaking of drinking urine, dilute or otherwise calls to mind two other situations. We were in Palawan, the long island between the Philippines and North Borneo the roads were impassable and we had hiked across a ridge to a small village on the west coast. The forest was being cleared (as are all tropical forests everywhere) and a rest house had been built at the mouth of a small cavern from which flowed a small stream. Water from this stream supplied the rest house and others who occupied the land below the house. Emptying my pockets of valuables and preparing a wooden float mounted by a sputtering candle I waded into the stream and entered the cavern, swimming and scrambling along the walls, pushing the small lighted float ahead of me. Numerous tiny flies gathered at the light and tiny silvery fish leapt from the water to snatch at them. Bats swooped and squeaked from the low cavern roof and walls above me. Back at the rest house and dried out I was offered cool water from a stone urn that stood in the shade on a porch. Mosquito larvae scampered aside as I reached in to dip up another glass and the house boy refilled the urn from a bucket dipped into the stream. Yes, I was drinking dilute bat urine laced with mosquito larvae.

We were floating by raft down the Ping River in northern Thailand, from



Figure 30. Bob Marks and Lucy holding Chukar Partridges, the last surviving of a game farm introduction at Jim Aagaard's farm. Ord Nebraska. (July, 1942).

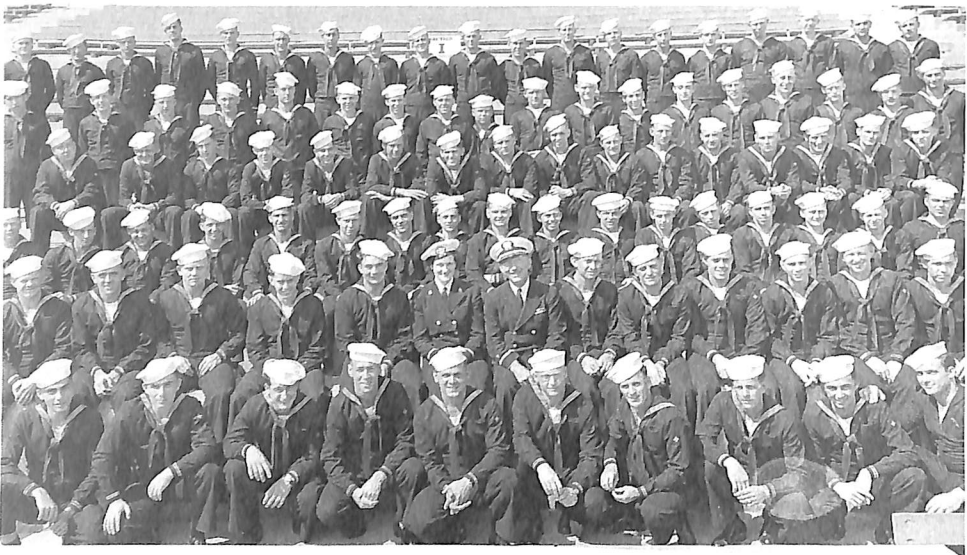
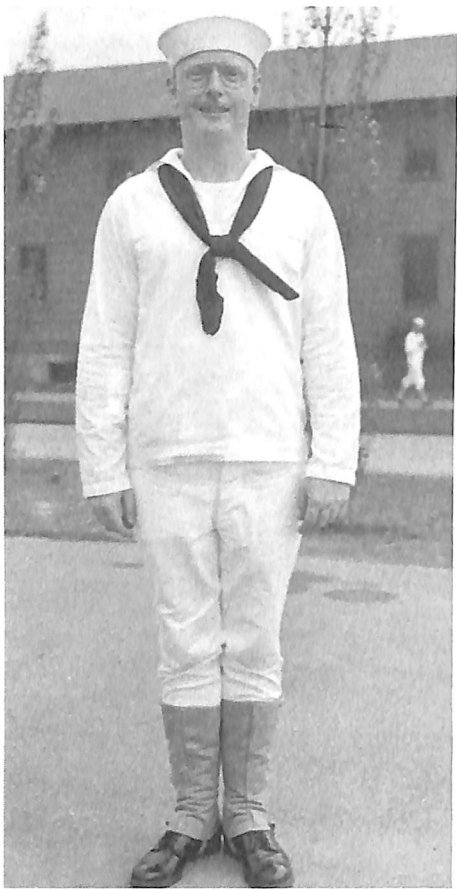


Figure 31. *Upper left:* A gob at boot camp, Great Lakes, Chicago. (May, 1944). *Upper right:* Jump to Lt. (jg), with Dad at Kankakee, Illinois. (May, 1945). *Lower:* Company 4-2, U.S. Naval Hospital Corps School, Balboa Park, San Diego, California. (7 October, 1944).

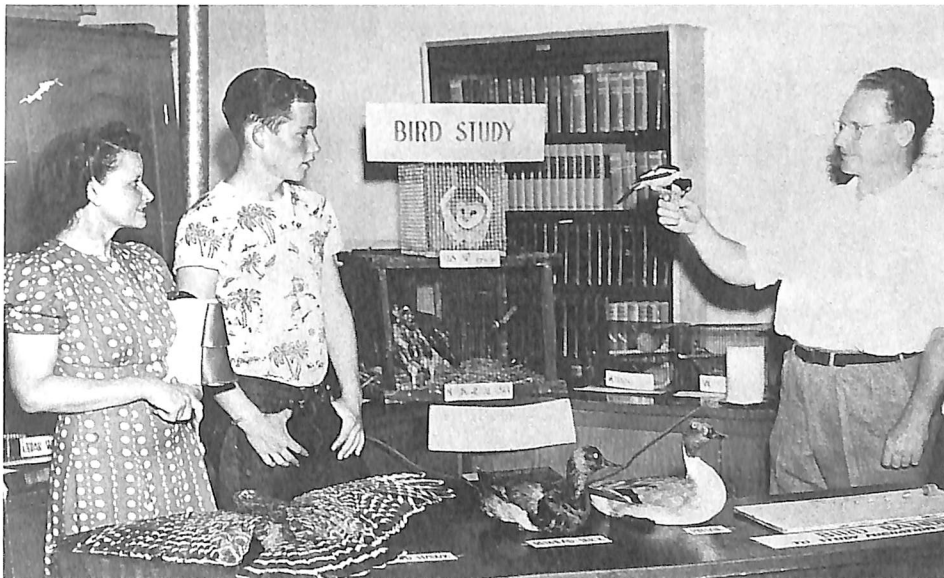
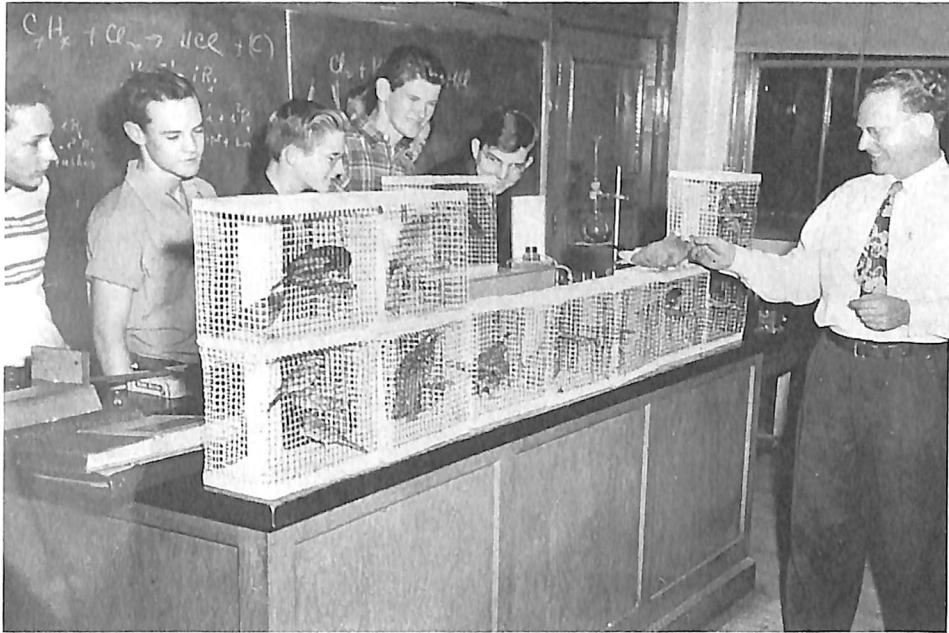


Figure 32. Students enjoy lectures on birds. Bakersfield, California (1948).



Figure 33. The girls, Katey, and Rastus at the cabin on the Kern River, Bakersfield, California (September, 1946).



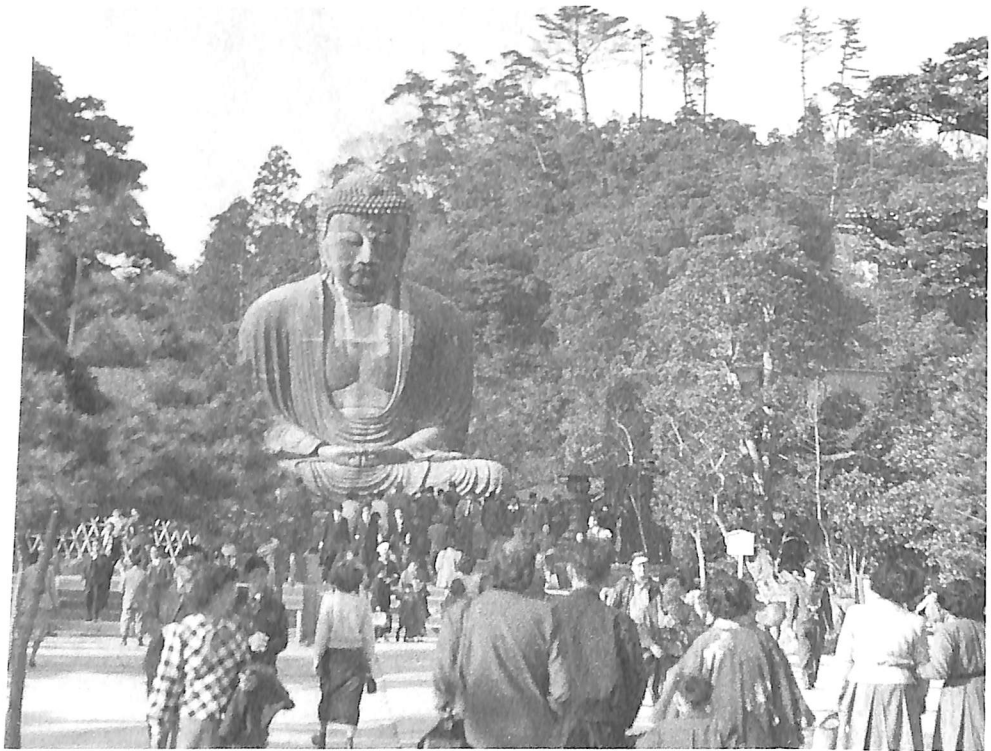
Figure 34. *Upper:* The museum that we had in Ord, Nebraska, open to school children (25 September, 1943). *Lower:* The Troupial performing at Bakersfield, California (1949).



Figure 35. *Upper:* Troop 1-1 at a camporee near Tokyo, Japan (23 October, 1956). *Lower:* Milt Espiritu and I receive Silver Beaver awards from Maj. Gen. R.W. Ward in Tokyo (11 February, 1957). (U.S. Army photos)



Figure 36. *Upper Left:* John Masuoka and I at a Camporee near Tokyo (June 1956). *Upper Right:* Camp cookery (June 1956). *Lower:* Toda, John Masuoka, Mrs. Masuoka, and World Scout Gerry Solberg, who visited Japan in May, 1956.



**Figure 37. *Upper:* Beautiful young koto player, Tokyo (1950).
Lower: The Great Buddha at Kamakura, Japan (1950).**

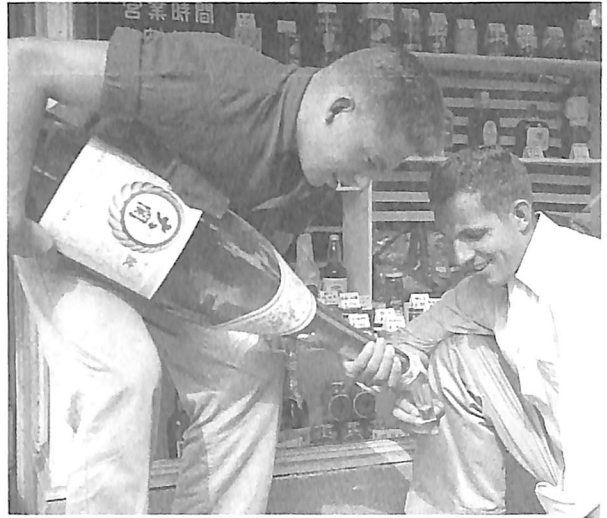


Figure 38. Tourists in Tokyo: Ronald Reuther, Clark Johnson, McClure, and a charcoal burning taxi (1950).



Fig. 39. *Upper left:* Masashi Yoshii and Teruko in Tokyo (December, 1959). *Upper right:* Teruko Yoshii and McClures in Yokohama (17 June, 1958). *Lower:* Our family at House 495, Shibuya, Tokyo — Emiko, Miyuki, Michiko, and Lucy (1952).

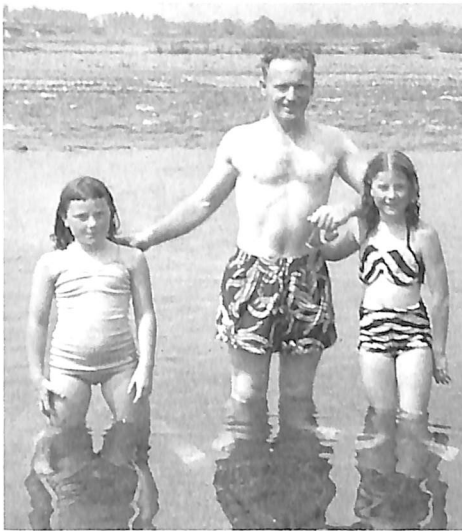


Figure 40. *Upper:* Family at Naruhama beach in Chiba (July, 1952).
Lower: Yoshii visits Teruko's family in Aomori, Japan (1951).
 Teruko is first on left.



Figure 41. *Upper:* Easter Sunday at Union Club of Tokyo, joined by Lolita and Wallace Dean (10 April 1955). *Middle:* Christmas with Fred Reuther and my mother joining us at Washington Heights, Tokyo (1955). *Lower* Motoring in Miyakejima with Jack Moyer and friends (May, 1953).



Figure 42. *Upper:* Moonbeam Inn (1951). *Lower:* Checking specimens in the skin collection, 406th Medical General Laboratory, Tokyo (1954).



Figure 43. Strife in the women's section of a bath house in Tokyo in the 18th Century, humorous woodblock by Harunobu.

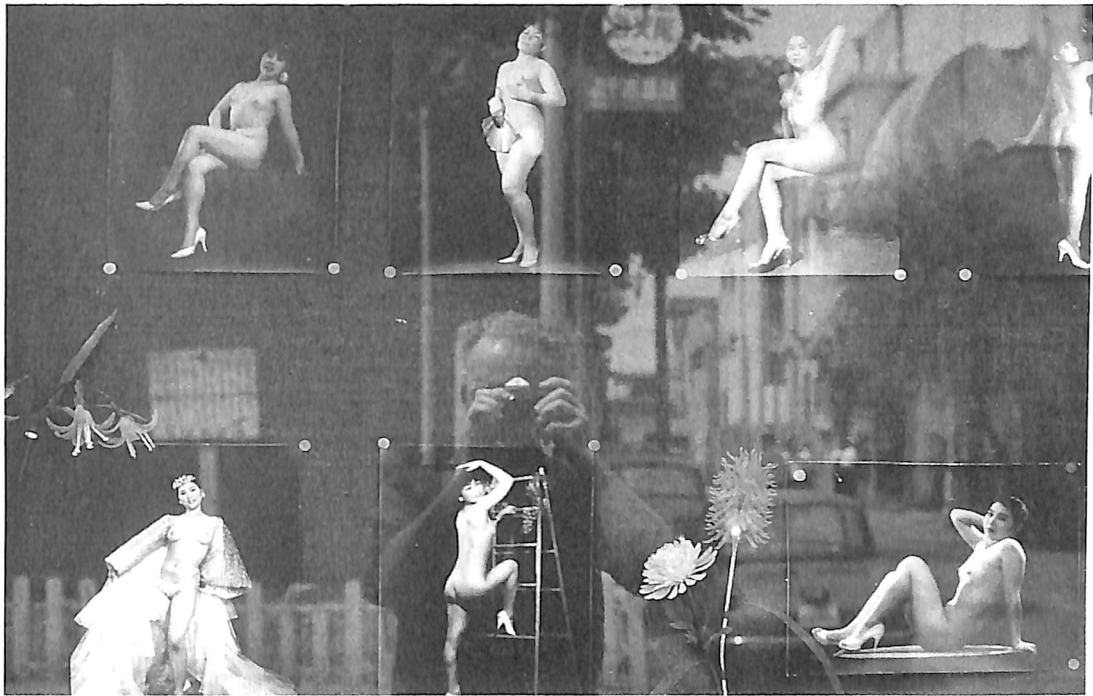


Figure 44. *Upper:* Self portrait (me in background photographing posters for a strip show), Tokyo (1953). *Lower:* Divers for seaweed at Miyakejima, Japan (1953).



Figure 45. Upper: Dr. Schmidt and I working with nestling egrets at the Shinhama Imperial Household refuge (summer, 1955). (U.S. Army photo) **Lower:** In the field near Tokyo (1950).



Figure 46. *Upper: Ron Reuther learns to bleed egrets at Shinhama, Tokyo (1950). Lower: Surveying egret populations on the Kanto Plain by helicopter. Capt. John Ferguson the pilot (April, 1955). (U.S. Army photo)*



DR. H.E. MC CLURE
HONORARY MEMBER



F.C. LANG
COMMANDING

Figure 49. McClure donates an owl to the Marine Night Fighter squadron for a mascot, and becomes an honorary Flying Nightmare. Major F.C. Lang receives the bird. Tokyo (August, 1957).



Figure 50. *Upper:* Lucy demonstrates the use of an electric sweeper to Sumei Bill, Kazuko Hamilton, Rieko Crickenberger, and Hideko Moe, Japanese brides of American GIs, at our home in Washington Heights, Tokyo (31 October 1953). (U.S. Army photo) *Lower:* Lucy receives commendation from BG Garrison B. Coverdale for her work with the American Red Cross in Tokyo (17 February 1956).



Figure 51. Upper: McClure at the end of a jeep trip, Kumamoto, Japan (February, 1955). Lower: Famous faces at a conference in Hawaii. Front row: Harry Hoagstraal, Robert Domrow, ?, ?, Hugh Keegan. Second row: ?, Ralph Audy, Al Rudnick, Bill Reeves. Third row center: M. Nadchatram.



IN GRATEFUL APPRECIATION

*For understanding, sound judgment, distinguished in. In addition to your
rendering service of duty, a willing person to undertake any task. You were
the first with a total disregard of the time involved, a sign that is
understanding of the Red Cross and a family community service also well
known and come in contact that were for the Red Cross and its
work and its service.*

FAR EASTERN AREA

DATE *February 15, 1956*

Sumner Salomon
DIRECTOR OF OPERATIONS

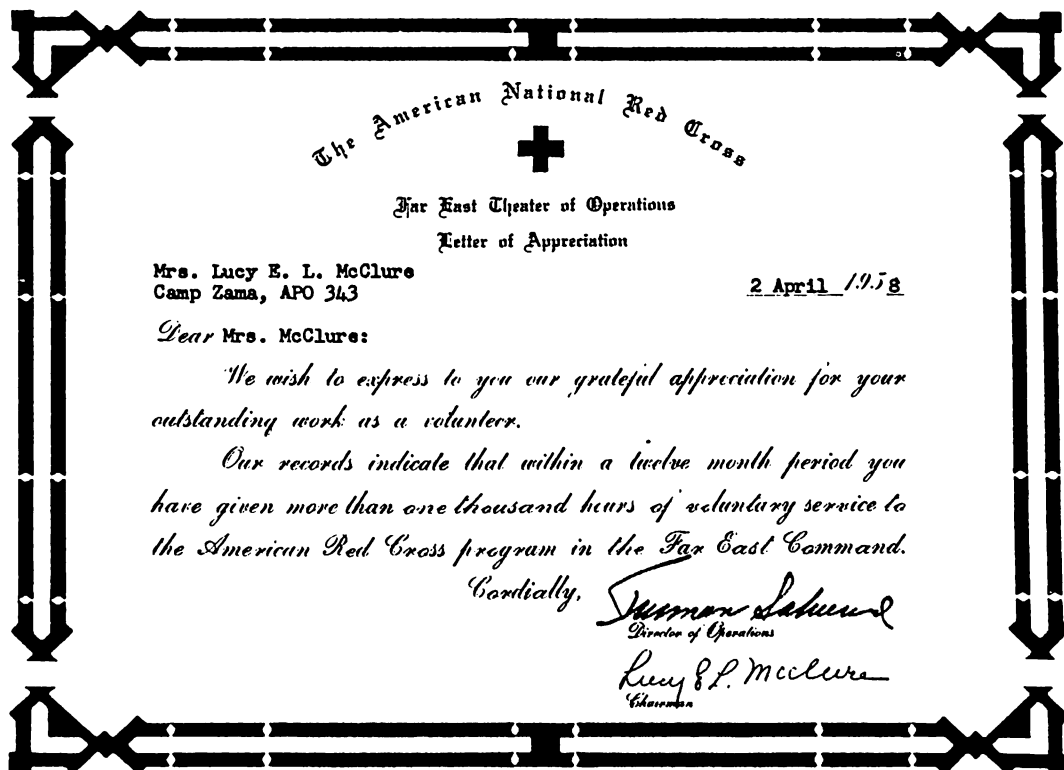


Figure 52. Lucy received at least 3 commendations for her work with Red Cross and with the local chapel.



Figure 53. *Upper:* Busu's son watches his father test a blowgun, Subang Forest, Malaya (1962). *Lower:* Miss Somphon at the stairs of Wat Suthet, Thailand (1957).

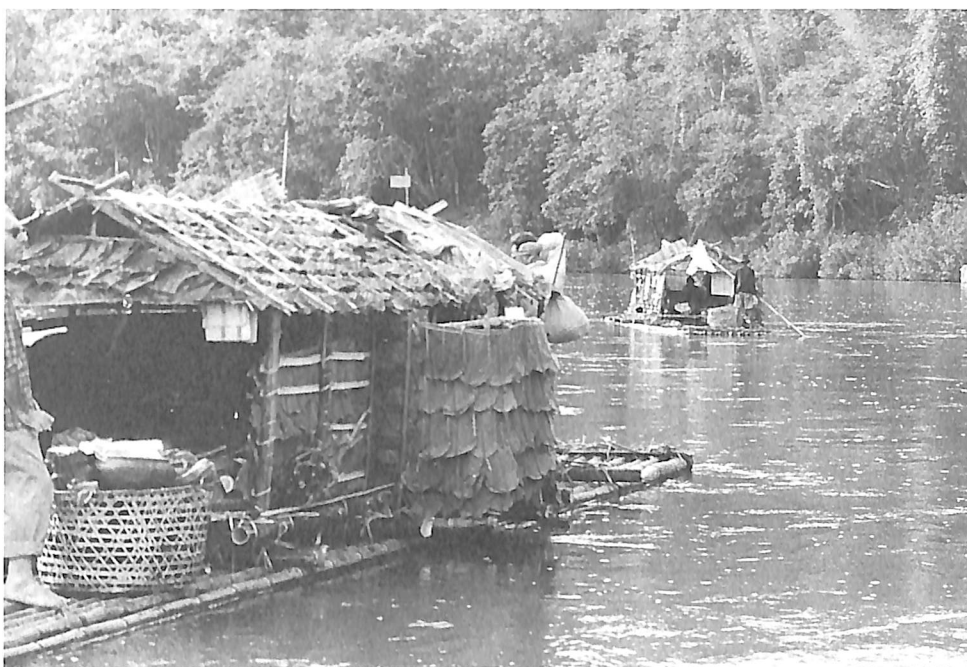


Figure 54. *Upper:* Rafts of the 9th Pacific Science Congress tour on the Ping River, Thailand. *Lower:* Miss Somphon and her cook's raft (December, 1957).



Figure 55. Working from the back of a Land Rover in the forest near Kuala Lumpur, Malaya (1960).

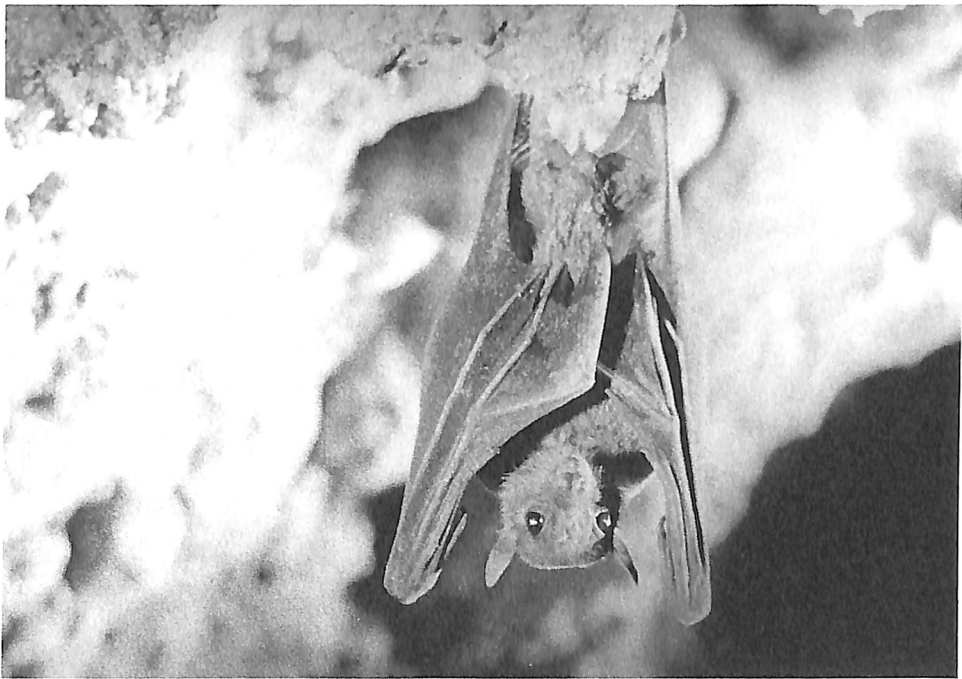


Figure 56. *Upper*: The white cave snake, *Elaphe taeniura*, of Batu Caves, Malaya (1960). *Lower*: Dog-faced fruit bat, *Eonycteris spelaea*, of Batu Caves (1960). (Both photos by Malayan Film Unit)



Figure 57. *Upper*: Batu Caves limestone massif near Kuala Lumpur, Malaya, site of cave studies in 1961-62. *Lower*: Rare primitive trapdoor spider with jointed abdomen, *Liphistius batuensis*, from Batu Caves. (Photo Malayan Film Unit)



Figure 58. *Upper: Laughing girl. Lower: Borneo beauty. Lovely Dyak girls of Sarawak, Borneo (1970). (Photos by K.F. Wong of Kuching, Sarawak)*



Figure 59: *Left:* Platform at 140 feet in the canopy of the Gombak Forest near Kuala Lumpur, Malaya (1962). (Photo by Larry Quate) *Right:* Ladder attached to a Meranti tree leading to the platforms in the canopy. (U.S. Army photo)



Figure 60. *Upper:* Hussain and I band birds at Rantau Panjang, Malaya (1959). (U.S. Army photo) *Lower:* Busu and I examine a babbler's nest in a forest now displaced by the Kuala Lumpur International Airport (1960).



Figure 61. *Left:* Buttress of my tree at Gombak Forest in Malaya (1963) (U.S. Army photo) *Right:* Nancy Greene admires a massive Strangling Fig Tree at Khao Yai National Park, Thailand (1970). (Photo by Richard Greene)

the Chiang Mai area to where the Yang Hee dam was being constructed (stream and forests now buried in a great lake). It was a week long trip, between bamboo forest covered, or evergreen hardwood forested walls and hills and through lovely valleys. The rafts, provided by the Tourist Bureau for the participants of the Pacific Science Congress of 1957 held at Bangkok, were luxury vehicles. Provided with sleeping quarters for six or seven travellers, a canopy to provide shade, toilet facilities, and polemen to move the raft and negotiate rapids. It was a deluxe trip. As I studied the terrain and birds that passed by my binoculars steadied against my knees I occasionally dipped a cool drink of crystal water from a stone bowl. I couldn't help but compliment the efficient Thais who had provided us with such excellent water when so far away from civilization, until I saw a poleman reach over and refill the nearly empty bowl by dipping it into the river.

They were teaching the young hospital corpsmen and officers in the School of Tropical Medicine some of the problems and solutions in the field of sanitation. The officer giving the course was innovative in his methods of presenting his material. For example, when talking about vitamins and food values he had a table set on the stage with a full meal and four of the young men sat down to eat it. As they enjoyed the meal for the hour lecture he discussed vitamins, caloric values, and the importance of each food that they were consuming. A most dynamic way to teach a little dietetics and know that your audience would remember it.

Came the lesson on water. He had on the stage a table with four glasses and a pitcher of water. He discussed water contamination for a few minutes and then selected a man as a volunteer from the audience whom all present knew. He sent the volunteer off stage. Filling the four glasses with water he mixed a little harmless coloring in one so that the water was discolored. In the second glass he added something that made the water smell bad. To the third, the additive gave it a poor flavor. When the instructor came to the fourth glass he reached into a drawer in the table and brought forth an actual stool specimen from the hospital. With a dip stick he put a minute amount of the feces into the water, so that it was the only solution that was contaminated but did not look so. Then he called in the volunteer. "If you were in the field and saw water looking like these, which would you drink?" "Why this one of course!" and the volunteer reached over and drank from the contaminated glass. The lecture room was in an uproar and the poor volunteer had to be given medication. But the students didn't forget this one.

Whenever I lecture on these vibrant tropics, someone in the audience will ask, "What about the snakes, did you see many?" Fear of snakes is always a topic of conversation. It is one of those unreasoning fears with which unthinking adults imbue their children. The child who doesn't respond to this is either a biologist's child or one with a natural biological bent. I was one of the latter yet I can remember an incident when I was about five years old. A neighbor teen-aged boy had a jar of dragon flies which he had caught and he assured me that they were devils darning needles and that they were poisonous. This so impressed me that it was years before as an entomologist I could pick up one of these most harmless of insects and not cringe. I steeled myself to

learn to catch them as they poised on a twig-tip by gently grasping them by the abdomen. Later this and petting the furry back of a bumblebee probing a deep flower always impressed my Boy Scouts or students. But to get back to snakes.

In 1960 I was doing an intensive study of the fauna of Batu Caves outside of Kuala Lumpur, a cave in a limestone massif rapidly being beaten to pieces by at least three quarries. Among the denizens of this cavern were hundreds of species of insects, a host of bats of four species, creatures of the mud and water, a shrew, and a beautiful white snake. It crept along the walls to prey upon the resting bats. Its dark colored counterpart lived in the forests, but here it was milk white with a striped tail. It was a harmless constrictor that killed its prey by crushing it.

A Chinese man encountered me as I left the cave entrance one day, "Were you in there alone?" he enquired apprehensively. "Sure, I work there each Saturday." "Oh, I wouldn't go in there! It's full of snakes!" "No! I've been exploring it for more than a year I've seen only five snakes." "It's full of snakes!" "Will you please show me where they are? I would like to see them and how they live." "Oh no!! I wouldn't go in there! It is full of snakes!"

We were having a Red Cross first aid class for Boy Scout Leaders in Illinois. When we reached the lesson on snakes and snake bites I took my pet Bull Snake to class. My topic was how to recognize poisonous from nonpoisonous species and as I drew this snake's long, beautiful, multi-golden form from my pocket there were gasps from several of the men and the room nearly emptied. They couldn't take it. This same snake nearly broke up a friendship. We had dinner guests in our home, old high school chums who had since married. She was one of the class beauties and he the president and one of the most popular boys. Unthinking, I brought the snake out to let them admire. She went into hysterical tears and he was furious, thereby breaking up a nice evening, a dinner, and a friendship.

You may know of the hysterical woman who flagged down a passing car in Arizona for help for her unconscious husband who had been bitten by a rattlesnake. At the hospital they could find nothing but a few cactus spines in one calf. When the story was pieced together they found that the pair had stopped to take a picture of the desert. She wanted him in the picture so he walked a few yards from the road and as he turned toward her where she held the camera he bumped into cactus that rattled as he drove the spines into his calf. He screamed, "I've been bitten by a snake!", and passed out, nearly dying of shock. Such is the fear of snakes.

What people believe about nature that is unrelated to facts is incomprehensible to the biologist who has learned something of cause and effect. Nature is absolutely wonderful and needs little improvement, because time has permitted almost any combination of perfections in plants and animals, far beyond the fertile imaginations of man. Yet I have been assailed by lore that is truly astounding. It is the supernatural that sways man's thinking.

Among the most ardent believers in the supernatural are the Taoist influenced Chinese. Their spirit world is so powerful that they live in constant dread of it. To the occidental mind it is ridiculous to spoil your enjoyment of nature by creating demons and ghosts to inhibit this enjoyment. There was a British man in Hong Kong who lived on a steep hill. A street came down the hill and made a right angle turn at his home. As he was aging he did not like to climb the steps from his front driveway, but opened the wall to the descending street so that he could walk out of his garden on near level. The Chinese were horrified! Everyone knew that demons couldn't turn corners and by opening his wall he would let them in. He would die! Of course, he eventually did, and his estate administrators quickly had the wall rebuilt.

The same Chinaman who assured me that the cave was full of snakes also told me about the little fishes that live in the rice fields. When the fields of Malaya are flooded to irrigate the rice or by flooding following torrential rains small fish of many species move from surrounding waters into them and multiply rapidly, feeding on mosquito larvae and other small life. As the rice grows and comes into flower, the water is drained away and the grain gradually matures. It is then that flocks of small weaver finches called *Munia* move in to feed upon the young and maturing rice heads. According to my biologically informed Chinese friend, the little fishes could not live in the fields without water so they "turned into the little birds!"

A Methodist preacher at Kuala Lumpur was a fine nature loving man with a home and garden near the edge of town. Christian men of God have to walk a fine line in a Mohammedan country. Buddhists and Hindus may change their views about God and religion and join other faiths, but the Muslim risks life to make the change to Christianity, therefore missionaries must be careful to warn their Mohammedan friends not to convert. But this is not a story of religion and ethics.

My Methodist friend had his office on the ground level of his home with the door opening directly onto the garden. The door was usually open while he worked at his desk so that he could enjoy the activities of the garden, and so that the frangipani scented air could flow in. He had a ten inch electric fan on the floor beside him helping this moist tropical air to move. One morning as he was busy writing he heard something strike the fan blade, as if a paper clip had fallen into it. Looking down he was aghast to see a cobra coiled beside him, hood raised, and striking at the moving blades of the fan. As he explained, "My dilemma was how to move from the chair without diverting the snake's attack to me!" It was a tense moment but he managed to move as the cobra was preoccupied with the fan.

Another fan story involves a hummingbird. I do not remember the species, but it was probably the Ruby-throat.

Many people have found injured hummers and by careful feeding with sugar water and proteins (the proteins are essential) have brought them back to health. Hummingbirds have a very high metabolism and everything is geared above the level of our experience. With a normal body temperature of 105 all of their body functions are at that level, more rapid nervous reaction, more acute vision and hearing, greater speed and alertness. Once familiar with the

hazards of a room they can remain free within it and make amazing pets although I would not recommend it. Free living hummers at your outdoor feeders are much more fascinating.

However, one woman had a pet hummer in her home and came into the room to find that someone in her family had turned on a 12 inch table fan and left it. Her hummer was on its perch among a house plant and before she could move to turn off the fan the bird moved to and hovered before it. Then to her horror it sped toward the fan and through the blades. Expecting to pick up its dismembered body she saw it hovering on the other side only to turn and dash through the blades again. It was a game which the bird thought was fun and the woman learned that she could demonstrate it to friends almost any time, for the bird loved to test its prowess by this dangerous sport.

Medicinal values and Chinese medicines have always been subjects of discussion. As prolific as the Orientals have always been they have sought to prolong their fecundity and augment it whenever possible. From this desire for continued masculinity have grown interesting folklore. The most widely known and discussed has been the aphrodisiac value of powdered rhinoceros horn. In markets where it is in demand it still brings prices as high as the hard narcotics. And subject to high prices it is adulterated by all sorts of compounds, sanitary or otherwise.

Arn Dyrberg, Director of the Copenhagen Zoo, likes to tell this one. When he was at the Bogor Botanical Gardens in Indonesia before the revolution drove the Dutch out there was a zoo in the gardens as well as an extensive museum. As an expert taxidermist and preparator he was proud of the exhibits in the natural history museum. Among them was an Asian Rhinoceros of the small, two horned variety. It was, and probably still is, a common occurrence in the museums of Asia to have the horns of rhinoceros specimens chopped off and stolen. He was proud that his specimen had never been damaged, but one morning when he inspected the exhibits before opening time the horns from his favorite specimen were missing. Chopped off close to the hide. Mixing pig bristles and plaster of Paris he created new horns and within a few days his specimen was whole once more. Again a thief hacked off the horns and the third time. Three times in all Arn duplicated the horn with pig bristles and plaster. One wonders at the sexual success of men fortified by pig bristles and plaster in their tea.

Years later an off-shoot from this custom of ground horns for sex caused a stir in California. A Chinese merchant dealing in magic medicines was using deer and elk antlers as the basis for his aphrodisiac powders. His claims for powers of this powder were glowing. But elk horns were expensive in China or even in Hawaii where he had his shops. So he came to California and wanted to import elk from Montana and Wyoming to a small farm in California where he could feed them and each year remove the antlers when they reached the proper richness for harvesting.

He immediately ran into problems with the Game Department and

conservationists who were making an effort to save the Tule Elk of California, a small variety of earlier elk populations in California, but an identifiable subspecies. If Wyoming elk were brought in and escaped they could alter the pure strains of Tule Elk still surviving. The matter came to a hearing before the State Fish and Game Department and many arguments were raised against such an enterprise both by conservation and by humane societies. The remarkable part about the hearing was that little consideration was given to the fact that should the state grant a permit for this it would be an accessory to a fraudulent scheme to dupe the public. Anyway, they did not grant the permit to "mutilate" the elk.

Col. Traub set up very extensive safaris in Malaya and was always meticulous that we had what we needed for the field work planned. This is a story illustrating the fact that Asians, like New Englanders, usually do not vouch information beyond the answer to a simple question.

We were headed for a faunistic study at Pulau Pangkor Laut in the Malacca Straits off the west coast of Malaya. Bob wanted us to also visit the smaller islands nearby and to go to the Sembilan Islands if possible. A British built rest house was on Pangkor and contact could be made by phone.

He contacted the Chinese-Malay who operated the Rest House. "Do you have a motor boat?" "Yes!" "Does it run okay?" "No!" "Do you have another boat?" "Yes!" "Do you have a spare motor?" "Yes!" "Will it run?" "No!" "Well, do you have a row boat?" "Yes!"

We arrived several days later and set up a field camp near the Rest House. We were shown the boat. It was a row boat all right, but had no oars!! Bob had forgotten to ask about the oars!! So now when someone finds himself at a loss or inconvenienced because things didn't turn out the way they should have, we tell him or her, "You forgot the oars!"

There is a basic deep seated resentment among the females of the human species when they see their men marry into other cultures and races. This may be a fundamental thing related to purity and identity of species. Among most animals the male is the wanderer and philanderer. He goes out from the home territory and sets up his own and tries to attract the female of the species to him. If the females were also lax in their demands, inter-breeding between species or within genera might be more prevalent, thereby taking longer for species to identify themselves and become established in the evolution of things. Be that as it may, women do resent seeing their men marry far afield. We saw this in the eyes and actions of women whose countrymen married into Asian bloodlines.

It was a gala evening at our home in Kuala Lumpur, good food, excellent wine, and good conversation. The guests were British, American, Indian, and Chinese, all scientists, doctors, and biologists. Among such a group the talk

invariably becomes shop talk, revolving around the interests of the scientists present. It had turned to the research exploring the possibility of communicating with porpoises, whales, and other of the highly developed and communicative cetaceans. In a lull in the conversation, someone asked, "If we learn to talk with the porpoises, what will come of it?" A brief silence and one British lady said acidly, "The Americans will marry them!"

Environmentalists, like husbands, are a sorry lot and subject to excabertion by those that feel inflicted upon by them. I had heard that Singapore was having a clean up program. Since its independence from Malaysia its leaders were attempting to make an already beautiful English-Chinese city more modern, cleaner, and more beautiful (in which they succeeded admirably). In this clean up program they were shooting the House Crows (*Corvus Splendens*) which scavenged the city, a policy which was counter ecological in my eyes. I wrote to the head of the sanitation department warning him that the crows were an integral part of the environment and that the fact that they were present indicated the condition of the city. If he cleaned up the city the crows would leave and he did not need a killing program.

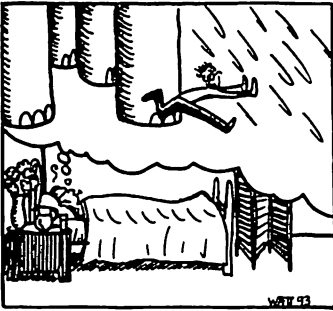
In return I received a furious letter telling me that I was a busy body and knew nothing about the conditions that existed and that it was damn well none of my business anyway. To this I followed with a letter telling him that if he really wanted to get rid of the crows there were ways to do so without killing an I described several.

This reconciled him and in return he thanked me saying that mine was the first constructive criticism and if I would come to Singapore and advise them further he would pay my way. I was in Bangkok at the time and assured him that I would be in Singapore soon and would drop by to see him.

Several weeks later that day arrived. We had a nice chat during which he said that they had already solved their crow problem and called in a young man to explain how they were doing it. He revealed that he had shot some and that they had left. To this I said, "If you will look, you will see that they have gone to the nearby islands and islets of the channel and to Indonesia to wait for you to quit shooting before returning." His face was a study, a study in embarrassment, chagrin, and amazement. His superior turned and asked, "Is this so?" Obviously he had been bathing in the light of success without reporting the whereabouts of the crows and was now uncovered by this paleface who also knew about crows.

And speaking of crows, have you ever tried to leave the New Delhi airport at dawn? A vast flock of House Crows leaves its roost and passes over the airport at this time enroute to the city and the dumps. The flock extends in a seemingly endless stream many hundreds of feet thick from horizon to horizon. All aircraft are grounded or retained in a pattern above them for the thirty minutes or more that it takes the flock to pass. It is one of India's most spectacular and unheralded sights. But this was written in 1966 and by now the airport may have been "improved" by eliminating the crows (or dump)!

25. Scrub Typhus



Scrub typhus is a rather violent febrile disease, often fatal, caused by microscopic life called rickettsia, which appear as very small bacteria and are named after Dr. T.H. Rickets, an American researcher who found them the cause of typhus. There are many rickettsiae causing a variety of diseases in all latitudes. The well known rabbit fever, tularemia, is one of them. Typhus is also a disease of rats and many other animals.

Like many such creatures it has more than one life phase. In this case the rickettsia lives in a tiny mite known as a trobiculid, (*Trombicula deliense*) or a chigger. As adult these mites are eight legged arthropods, relatives of ticks, a bright red, large enough to be seen crawling under soil debris or loose bark where they attack and kill other small creatures or the eggs of insects. These adults mate and the females lay round, pearly white eggs in some damp, dark place. The chiggers that hatch are bright orange, six legged, and voracious. But unlike their parents, they are not satisfied with an insect diet, they want blood. They crawl by the hundreds to the tips of blades of grass or other low plants and wait patiently, waving their front legs and hoping for the delicious CO₂ smell of any approaching mammal. If touched by one they scramble off, find a warm spot like the ear, abdomen, or vent and dig their sharp, stillete-like mouth parts into the tissue for a meal of blood and lymph. The vertebrate host might be a rat, a mouse deer, a walking bird like a quail, or a human. If this host is infected with rickettsiae which are floating or swimming in the blood serum, they too are sucked up. Within the gut of the mite they proliferate and bore through the stomach wall into the blood flowing around it. There they continue to increase and enter all tissues.

The six legged chigger is called a larva and having fed, it drops from its vertebrate host and seeks a hiding place in the soil. There it molts and becomes a nymph which does not feed, but continues to grow on the energy from the larva's one meal, and the rickettsia grow too, in numbers. Again this nymph sheds its skin to become another nymph and again remains unfed. Some days later it molts for the final time and becomes an eight legged adult. The rickettsiae have trailed along and remain in this animal as it seeks its prey and develops its eggs. By now they have permeated the ovaries and entered the eggs and as the eggs are laid, they too are infectious. This is transovarian transmission. When these infectious eggs hatch the new chiggers are now infectious as well. They climb to the top of a twig, board an unsuspecting vertebrate, which can be a human, and the cycle is repeated. The human is not a good host for the rickettsia which attacks many tissues including the brain and nerves and this host becomes feverish, very ill, and can die before it develops antibodies to protect itself from the rickettsiae, bringing a violent end to their life style in either case.

Many scientists around the world have been and are studying the lives of

these disease producing organisms and many men succumbed to them. Soldiers, planters, construction crews, tourists, in the lands where the chiggers occurred were bitten by them and many died. It was especially difficult for field ecologists or entomologists to avoid the chiggers. A team of biologists from Walter Reed Army Institute of Research had been sent to Malaya to work with this disease along with intrepid British and Indian doctors who had been struggling with it. New pharmaceuticals had recently been discovered, the wonder drugs, and one called chloromycetin had been shipped to the lab at Kuala Lumpur for tests with scrub typhus. Dr. John Harrison was down with the disease, gravely ill, not expected to live, and he was given the dosage prescribed. His fever subsided, he became rational, and recovered to be one of the first, if not the first to respond to this drug which has become a specific for scrub typhus.

I was involved in attempting to learn the role that birds might play in the epidemiology of scrub typhus. Were the birds involved? Yes, they were mounted by and bitten by the chiggers, but seemed rarely to proliferate the rickettsiae. But the mites could ride on a bird for several days and a migratory bird could carry them hundreds of miles during that time. When the mites grew tired of their meal and journey they could drop off in a new habitat, in a new world. Here the plot thickens, for the rickettsia does not weaken and die in this mite. No, it continues to live, generation after generation, passing from female to chigger again and again and thereby creating a focus of infection at the new location where the first infected chigger fell.

Concurrently, with the development of antibiotics had come insect and mite repellents and our clothing could be impregnated with these thus protecting us from this dread fever.

The forest near Kuala Lumpur where we worked were infested with *Trombicula deliense*. In many places the tips of twigs and leaflets of low plants appeared crimson with them. As my clothes were treated with repellent and I had repellents on my hands and face as well, I ignored them. We were trapping birds and I would sit on the ground to examine, measure, weigh, and band them (put numbered ring on a leg) before releasing them. Neglecting to put repellent on my sun helmet or topi, I would lay it on the ground beside me as I worked.

On the 24th October 1962, I awakened with stiffness and pain in my sacro-iliac area. Thinking it only a strain I relieved it by calisthenics and walking. The following morning it was again severe and again I relieved it by means of a good workout. There after, there was lessening pain and I continued to work in the forest each day.

Fourteen days later a mild frontal headache developed behind my eyes in the evening. It continued the next day centering behind my left eyeball, but both eyeballs became sore to touch. Six days after the onset of this headache I was in trouble. The lymph nodes (axial, sub-lingual, below ears, and along jaw) were swollen, my spleen was enlarged, and I was running a fever of 103 degrees. My back ached, neck was stiff, and the headache was blinding. The doctor prescribed the old standby, aspirin, glucose, liquids, and bed rest. Every fifteen seconds the pain would spring from my neck, rise up to the back of my

head, course to the right around my head, and explode behind my left eye. Back pains centered in the lumbar region shooting out to shoulders and hips. The rickettsiae were having a ball.

Lab tests had to be made. Did I have scrub typhus or had I picked up some other virulent jungle playmate? Early explorers called them jungle fevers, and doctors call them FUO, fevers of unknown origin. One, two, three, four, five days of 102 to 103 degree temperatures and I went into delirium. This was the most exciting part of the syndrome. Hallucinations began to develop with falling butterfly lights and luminescent rain. The luminescent rain was the most beautiful, but these began to give way to horror scenes. I was surrounded by massive pachydermic legs and feet that could crush me as I dodged among them listening to voices in the background which I could not identify. The great flexible horror masks and faces that arrived next were most disturbing.

In a lucid moment when the doctor was present I told him, "I know what these are now and am not frightened, but if I get any sicker and begin believing them, you are going to have me crawling up the walls!" The tests were complete and I began a treatment of three grains of chlorophenocol every six hours, dropped to two each six hours the next day and one each six hours the third. There was a great roaring in my ears as if I was being consumed by the fires of my fever and my hands felt as if they were encased in thick, heated gloves.

The medication was begun on 18 November and within 24 hours my temperature was near normal and I ravenously called for a steak, craving meat and salt. The temperature went up a little, but cold showers and aspirin brought it back to normal. A bit of a relapse with a temperature rise as the rickettsia tried again was relieved by a four day routine of tetracycline. Temperature remained at normal after 28 November and I was back in the forest five days later, a month after the onset of fever. But there were sequelae from all of this. A slight cold or feeling of indisposition would bring back a headache behind the eyes and my hands would develop hot gloves again. It was ten years before a rise in temperature was not accompanied by this hot handed sensation. In fact, I learned to be able to guess any rise in temperature, even that brought on by a day in the sun with its accompanying sunburn, by the intensity of heat in my hands, a reminder of the hours of beautiful, luminescent rain. I escaped malaria or any other infection even though I wandered along jungle paths in Malaya and Thailand for 15 years.

26. Batu Caves



The year long study in Batu Caves resulted in several scientific papers. My weekly trips back into this teeming stygian darkness were a constant source of wonder to me. Carrying several pint jars containing a little 70% alcohol and an equal number of flashlights, I placed each jar at given locations with a lighted torch balanced above it. Hosts of tiny flies, beetles, parasitic wasps, and other interesting creatures swept up to these lights and in their dancing

before them fell into and were drowned in the alcohol. Later sorting these into groups and species, I sent them to taxonomists familiar with them who could identify and describe the various species. Having set up these traps on each trip I would continue to the end of the chambers, about a half mile into the mountain, where I would extinguish my light, lie upon the damp soil, and listen to the vibrant life and activity around me.

In order to describe the features and inhabitants of the cave, as I penetrated deeper and deeper into its channels, I labelled its cavern rooms as A, B, and C. It is to these rooms that the following discussions refer.

Batu Caves, like all caves, is a circumscribed habitat, with uniform temperature and almost uniform humidity. It is teeming with macroscopic and microscopic life, filling many niches; each species inter-acting in some way with many of the others present in the same habitat, perhaps dependent on some but forming the prey of others.

Within the caverns ecological groups or communities can be identified as those of the semi-darkness and total darkness. Further division includes those in water, beneath the soil, on soil or stone surfaces, and associated with the vertebrates.

In Cavern A nearest the entrance, the most conspicuous inhabitants were the millions of roaches (*Pycnoscelus*) which ran over the surface and burrowed in the top inch or so of the semi-dry guano and soil. They were a species also common outside the cave and had made no adaptations to the semi-darkness since they are nocturnal creatures. Their numbers varied slightly during the year and included about 200 to 300 per square foot of surface, 300,000 or more in an area no greater than that of a room 40 x 25 feet. All ages were present and the brown egg-purses were laid in the soil or beneath stones or bits of wood. The roaches fed upon the organic debris of guano. They in turn were the chief food of big toads found in this cavern, and of the few centipedes that lived here. Early instar nymphs fell prey to assassin bugs.

This microcosm included mole crickets (*Gryllotalpa*) which burrowed in the soil, moving up and down with changes in soil moisture. They had large spatulate front feet fitted for digging and the adults are winged. Their chirping could be heard at all months except when the cavern was soaked with drip from the rains of November and December. Mole crickets lay their individual pearl white eggs in the soil bordering their tunnels.

Several species of ants also occupied this semi-subterranean habitat, and one species (*Pheidole*), which also lives outside the cave where it protects itself by building covered runways, retains this habit in the cave. Closely associated with these ants were a number of myrmecophiles or 'ant-guests', the most obvious of which were slow-moving sow-bugs (Isopoda) and very small crickets (*Myrmecophila*). These animals, hardly larger than the ants themselves, normally mingled with impunity in the foraging parties along the runways and were not attacked unless injured.

Other members of this community included a scarlet bug (*Fulvinus*). It is the nymphs that are scarlet, the adults are black with silvery wings. Eggs were laid singly or in small groups among the soil debris and nymphs and adults suck the sap of fungi that grow upon wood.

A feather-winged psocid (*Parasoa haploneura*), among the loveliest of cave insects, lived beneath debris feeding on fungi and fungal spores. Other species of psocids were so seclusive that only occasionally could one be collected at light.

Tiny, convex, black beetles appearing like droplets of shining moisture gathered in patches on pieces of wood or stone. These too were scavengers whose minute larvae are predators of even more minute forms such as young mites or Collembola.

The Collembola or springtails are slender white or grey forms which lived freely in the guano or in close company with ants. These also fed on the guano or on the bacteria that are breaking it down. Tiny white eggs were laid among the debris where they fell prey to mites and other small predators, but such were the numbers of eggs that there seemed to be no appreciable reduction of Collembola by this predation.

Another insect with a burrowing habit similar to that of the mole crickets, the hide-beetle (*Trox*) which, when disturbed, tucks in its legs and becomes indistinguishable from a lump of soil or guano. These beetles laid their eggs singly in their burrows and the larvae, which are C-shaped, fed upon the guano and other organic remains. They probably took nearly a year to reach full growth and pupated in the soil.

One of the most abundant animals on the surface was a case-bearing larva of a small tan moth (*Tinea*). The moths themselves were very abundant and were attracted to lights in large numbers. The eggs are laid in the soil and the larvae construct oval bags of silk to which they attach small pieces of insect remains forming a protective armor. For feeding and moving about, the head and front of the body are pushed out of a slit at one end of this flattened oval case. Despite the armor, these larvae were subject to a host of predators, which included an assassin bug (*Bagauda*) which could force its proboscis through the case and into the larva. Other insects which preyed on the larvae were parasitic wasps (Ichneumonidea) which laid a single egg in a larva through a stiletto-like ovipositor. The wasp larva feeds inside the host larva, eating first unimportant structures like the fatty tissues and only later, when it is nearly full-grown, attacking the vital organs and causing the death of its host. The wasp larvae then leaves the body of its host and pupates within the host's case. The fragile adult emerges a few days later and sets out to find other larvae in

which to lay its eggs. From these and other hazards, only relatively few larvae survive to pupate produce the adult moths.

With the near absence of light, some creatures that would shy from it (negative phototropism) respond to another stimulus, negative geotropism. They try to climb upon some object above the general floor level. Each projecting rock had a microcosm of its own, which included many of the creatures already mentioned, roaches, moths, wasps, but others joined them. In the slime of bat faeces were masses of scrambling mites which remain as yet unnamed. Primarily the guano is attacked by bacteria, which in turn are ingested with the guano by the mites as the next step in reducing the faeces to soil. The mites were of several species and sizes; some were white, others had heavy brown shields on their backs. They swarmed over everything for these were optimum conditions and their numerous eggs, laid singly, hatched continuously producing astronomical numbers of mites.

Another harmless waste feeder was a black earwig (*Chelisoches*) which was usually found close to the top of the projections. These came in all sizes, depending upon their ages, for they are wingless and at each moult (ecdysis) they grew larger and blacker. At times when the mites were most numerous each earwig was an unwilling vehicle for thousands of the mites. They only transport them from place to place and when the humidity in the cave falls, the mites desert their hosts which are then found clean again.

At certain times of the year, unwilling members of this community were the soft bat ticks (*Ornithodoros*) which have fallen from the roof of the cave. They sometimes get dislodged and fall to the floor, especially in March-May when the resident bats of Cavern A are joined by thousands of Horseshoe Bats. The increased activity then results in the ticks being dislodged in their thousands. They crawl about the floor, and climb up any projection in an effort to regain the roof.

Most of these species also occurred further back in the cave. The Penny Room of Cavern C was among the least disturbed areas of the cave. Its fauna was different from that of Cavern A. Blind snails abounded in both places, and roaches and their associates were also here but in smaller numbers. The Penny Room, so named because in 1959 a 1919 penny was discovered imbedded in the mud, was in total darkness. Its fauna was numerically dominated by flies, while on the walls there were a number of large predators which were not found in Cavern A.

The wall fauna included the trap door spider (*Liphistius*), the cave centipede (*Scutigera*), and the scorpion (*Chaerilus*), all of which are predators, and the cave cricket (*Diestrammena*), which is an herbivore and forms a major item in the diet of these predators. The cricket fed on fungus which grows upon the walls and floor and its eggs were laid in crevices in the stone or in the mud. Its long sensitive antennae helped it to detect its enemies and its long jumping legs enabled it to escape.

The trap door spider is an anomaly first discovered in 1923. Most spiders have the segments of the abdomen fused into one, but this is a living fossil, a spider with a segmented abdomen. (Fossil remains in ancient shale tell us that primitive spiders were like this before evolution fused their abdomens.) This

is a large, beautiful spider which spins a silken tube along the wall. From its front door it extends radii of thread for several inches. The front door is hinged and closes, leaving only a slit from which the spider may watch. But, also having enemies, the spider has a back door to its room as well. The outside of the tube is rough and dirty but inside is smooth and white. A cluster of eggs may be laid among the silk of the ceiling and when the young hatch they creep out (possibly through the back door) to spin small snares of their own.

The snares were very effective. When a fly or small beetle touched one, the vibration was felt by the spider which throws open its door and dashes out to capture the luckless victim. It hurries back into its lair to feed quietly, for exposed it might in turn fall prey to the swift cave centipede.

The centipede was near the top of a food chain and was probably rarely attacked by other creatures except the scorpion. Its mode of reproduction is interesting in that there is no direct copulation. Instead, at the time of mating, the male extrudes a pouch-like spermatheca which the female picks up and inserts in the vagina. Eggs are laid in crevices.

Hiding in crevices from which they rarely departed were dark gray scorpions. Crickets or roaches blundered past often enough that food was available. In their courtship the scorpions perform a dance, during which, as in the centipede, a spermatophore is transferred to the female. The white young are born and cling for many days upon the back of the mother. When they leave they must do so hurriedly or they may be attacked by their brothers and sisters, or by their mother.

Another predator that lived in the mud of the Penny Room was the well-spider (*Damarchus*). This spider digs a hole in the mud and stands guard at the entrance ready to seize any prey. If frightened, as by a footfall, it immediately retreats. Young spiders dug very small holes, and the size of hole increased as the occupant grew.

But there was a multitude of lives in Cavern C and here space only to mention the tiny flies and beetles. From the pools emerged thousands of midges or chironomids, while among the debris lived the larvae of many flies, and of the brown carpet beetles and the more slender gray aderid beetles. Five species of the aderids inhabited Cavern C and reached tremendous numbers. They are small predators that probably ate mites or collembola.

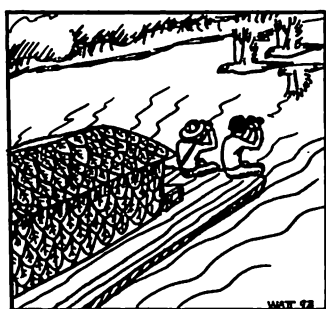
Most of the life histories of these numerous flies and beetles, wasps, and other creatures are unknown. Situated as it is so near to an intellectual center, the University of Malaya, Batu Caves with its unique fauna could become a great laboratory. It has been designated as a national park, but I do not know if students from Kuala Lumpur have enjoyed its biological potentials.

Following is a list of fauna identified from the cave. If such numbers of lives are found in the circumscribed confines of a small cave, consider the magnitude of life being destroyed in the destruction of rain forests.

List accidentally omitted

See Insert

27. *Ping River Cavalcade*



A year before we were to leave Japan I attended the Ninth Pacific Science Congress in Bangkok, sponsored and chaired by Dr. Harold Coolidge. Here Dr. Yamashina's wife most graciously introduced me to Her Majesty Queen Sirikit, a remarkable woman who made delegates at ease by speaking with them in Thai, French, or English. It was a magnificent Congress, as only the Thais can make such a meeting and their post Congress excursions were enticing. Dr.

Boonsong Lekagul and I elected to go on the geology field trip because there we would see the most birds.

We had been bouncing for hours over rough roads through a red, dusty, almost desert shrub forest under a glaring, burnished, tropical sun, and now we were threading our way down a steep hill to the broad flat flood plain of the Mae Ping River. There were twenty of us in the dust laden bus, ten geologists, one geographer, and two ornithologists, explorers from the halls of the Ninth Pacific Science Congress at Bangkok, five hundred miles away. The others were our Siamese hosts and hostesses, who had come along to manage this week long "geology" trip. We pressed hub deep through the sand of the dry flood plain forest, frightening Red-wattled Lapwings and Jungle Fowl from the shrubbery. Soon stilt supported, bamboo huts appeared before us and a quick turn brought us to the final terrace above the river.

Beached beneath us were the five rafts that were to take us down the Ping for the next five days. I don't know what I had expected, for the trip had been advertised as a "geology trip down the Ping River on rafts", but I was amazed by them. They were really small house boats, about thirty feet long by ten feet wide, constructed of freshly cut bamboo logs, a double tier tied together with bamboo and straw. The mid-section of each was provided with a bamboo cabin sheathed with the dried leaves of teak, and large enough for four people to sleep in as well as house the miscellany that we had brought along. A small portico at the side of each provided for latrine facilities. The travel was going to be deluxe. Each raft was provided with two native polemen who marvelled at all of these foreigners, but who were most amazed by the two bird men who were in a continuous state of excitement. In the spirit of the thing, our polemen were soon pointing out birds and struggling to inform us, but were frustrated because we didn't speak "the human language". There were new air mattresses and blankets for each member, an abundance of insect repellent, soft drinks (but no ice), and the food raft was loaded with cages of chickens, bags of rice, lockers of meat, vegetables, fruit, etc., including four hundred eggs.

Our host and leader, Mr. Jumchet of the Royal Bureau of Mines, assigned us our rafts and we quickly boarded and shoved off. Many villagers gathered to watch the expedition, well-labeled with a large blue and white banner on each raft emblazoned with PSC (Pacific Science Congress). It was

nearly sundown when we had arrived, so we could float only a short time this December 2 of 1957 before we would have to beach for the night.

Dr. Boonsong Legakul and I were strictly outlanders with the group. We had elected to come because the projected plans which had been circulated at the Congress meetings looked the most promising of all the post-Congress field trips for bird observations and romance. We were not disappointed!

On this first day Dr. Boonsong and I had become so elated by the colorful treetop species of birds that we saw at Doi Suthep Temple near Chiangmai that we had completely lost track of time and the entire group of geologists waited "en wrath" for us. Somebody brought along a typewriter and each day "The Pinger's Daily News" appeared, the first issue of which had this to say about bird people:

THE PINGER'S DAILY NEWS

Vol. 1

December 2nd, 1957

Sammy's Recommendation

What you should take with you in the here necessities is for yourself!!

You'll want warm clothing like sweaters (the Marilyn or Mansfield kind, please, but you wouldn't dare any way, would you?) warm undershirt and etc. would be convenient because its going to be quite cool in the dead of the night and early in the morning. But after ten o'clock everybody is obliged to take off their clothing (my, my) and put on the glaciating ingredients - best and cheapest in the river water itself.

Yes Sir, you'll have to bring up your own preferred sun tan lotion. We'll provide the insect repellents.

etc. etc.

Bird watchers (chasers)

Don't get me wrong! I never told you this is a pure geologic trip. I like birds too and I spend many hours (in my whole life) watching birds but never with binoculars. Birds are just beautiful ladies, they love to be watched and chased around and around. Sometimes you forgot all your important social engagements, sometimes you leave your dinner cold and sometimes you let your friends waiting for you.

But be careful, if it gets too long, you'll be left behind!!

In the hour of so that we were adrift, before we camped on a large sand bar, we saw or heard only seventeen species of birds. Among these were some of my friends from Japan; Kentish Plover (*Charadrius alexandrinus*), Little

Ringed Plover (*Charadrius dubius*), Greenshank (*Tringa nebularia*), Common Sandpiper (*Actitis hypoleucos*), Plumed Egret (*Egretta intermedia*), Pied Wagtail (*Motacilla alba*), Common Kingfisher (*Alcedo atthis*). A flock of chattering Blossom-headed Parakeets (*Psittacula cyanocephala*) had streaked across the river behind us, and, for those of us who know parrots only as caged birds, the speed of flight in the wild is startling. They dash among or above the tree tops, calling as if to speed up stragglers, with the complete abandon of a Paris or New Delhi taxi driver. As dusk set in, the river glowed a copper reflection of the sky and, silhouetted against it, small night jars swept in ever changing patterns back and forth a few inches above the water, catching the innumerable midges that were hovering there.

This first evening was a bit hectic as people learned their jobs and the expedition settled down. Supper was delayed until Miss Somphon (graduate in economics of University of Thailand, University of Michigan, University of New Mexico, and saleslady of air conditioners) took over and thereafter became queen of the cook shack. So well did she feed us and care for our special dietetic needs that Dr. Boonsong had no calls for medicine and dispensed only the daily anti-malaria pills.

Poets sing of tropical moonlit nights, and we had six of them, for the moon reached full on December 5. Each night was cool enough for a light sweater or jacket and biting insects were almost nonexistent. We slept, some in the cabins on the rafts, some in tents on the beach, some on the sand under the stars, but none was bothered by mosquitoes, black flies, or chiggers. We did not need the repellent that was provided.

Our real birding began on Tuesday, for during the day we saw fifty-four species and nearly a thousand individuals. We were still more or less in civilization. The valley was broad, the river lazy and wide, and meandered among extensive sand bars, there were numerous villages, and the river bank was lined with lac-producing dark green trees behind which was floodplain forest or small cultivated fields. Lac is a gum-like secretion of plant sucking insects which feed on twigs and cover themselves with this material, which when diluted by solvents becomes the basis of fine lacquer. During the morning roll call, the inhabitants of each raft were listed in the news.

PINGER'S DAILY NEWS

Vol. II

Morning Edition

December 3, 1957

Name of Pingers on each raft

I Ladies Raft

Miss Foster, she loves to climb

Mrs. Aubert de la Rue, she loves to walk

Mrs. Shepard, she loves to sit

Miss Mukda) - The Siamese twins (vacationing
Miss Puangsri) secretaries)

II Sarong Raft

Dr. Gaskell, he likes sarong
Dr. Grindley, he likes sarong too
Mr. Bradford, probably spy for tin mines
Mr. Jones, Arai Hah?
Nai Jumchet, chief sitting cow

III Sun Bather Raft

Mr. E. Aubert de la Rue, the man with plenty of film
Mr. Townsend) - the early sun bathers
Mr. Anderson)
Dr. Brouwer, he doesn't eat pork
Nai Pumvarn, got in the wrong raft on the first day

IV Bird Raft

Mr. Wiens, looking for coral reef
Dr. McClure) - the bird watchers
Dr. Boonsong)
Nai Sagnuan, he is studying this trip for public

V Cook Raft

Nai Methi, Jack of all trade
Nai Sothorn, undergrad from Chula
Nai Sri, number one cook
Nai Chieng, number two cook
Nai Chamras, dish washer
Miss Somphon, her voice carries 2 miles up stream

Combine the activity of a kingbird with the slender lustrous green of a parakeet and you have an inkling of the grace and beauty of the Bay-headed Bee-eater (*Merops leschenaulti*) which is so common in Thailand, and especially so along the rivers. We were almost never out of sight of at least one during the entire trip. Because their shiny feathers reflected light, they disappeared against the green foliage the instant they alighted on a twig, and their actions were so swift and dart-like, they seemed almost ephemeral. However, this is not a small bird, being somewhat larger and longer than a swallow.

The Large-billed or Jungle Crow (*Corvus macrorhynchos*) was at each village and we could tell when we were nearing a village, not by any change in the land except the "lac-trees", if they had been lacking before, but by the sentinel crow announcing our approach. Also in country opened about villages was the Spotted Dove (*Streptopelia chinensis*), a bird I had met years before as an immigrant among the trees of Bakersfield and Los Angeles.

The sand bar fauna was most abundant this day, and we saw birds on them which did not appear again until we reached another wide valley above the Yanhee Dam Site on Saturday. These sand dwellers included the Kentish Plover, River Tern (*Sterna aurantia*), Little-ringed Plover, Greenshank, Plumed Egret, Pied Wagtail, Common Sandpiper, Marsh Sandpiper (*Tringa glareola*), Little Egret (*Egretta garzetta*), Temmincks' Stint (*Erolia temminckii*), Pond Heron (*Ardeola bacchus*), Gray Wagtail (*Motacilla cinerea*), and Cattle Egret (*Bubulcus ibis*). The Spur-winged Lapwing (*Hoplopterus duvaucelii*) was the largest and most conspicuous river inhabitant, and its clanging call rang out as they swept up on black and white wings to fly on to the next bar. This continued until we had reached the limits of the territory of each small flock, usually five to twenty birds, and then they would turn back. The Red-wattled Lapwing (*Lobivanellus indicus*), another striking species, prefers the wooded floodplain, but was also present with the Spur-wings on this day. And finally, one bar was graced by all three species, Spur-winged, Red-wattled, and the Gray-headed Lapwing (*Microsarcops cinereus*), which reaches its northernmost distribution at Tokyo where Yoshii and I had made its acquaintance in rice fields.

High spot of our ornithological day came early in the morning when a flock of thirteen black and white hawks of medium size came through the trees, crossed our wake, and disappeared into the opposite forest. We had "Birds of Burma" by Smythies and Diegnans "Birds of Northern Thailand" with us and began a frantic search for a hawk that was gregarious. A few moments later our decision was verified, for we intercepted the same flock again, the Black-crested Baza (*Aviceda leuphotes*).

In the afternoon we were half dozing, for birding was dull in the heat of the day, when we passed an island on which the birds were too indolent to be disturbed by our bizarre appearance, and among the lapwings stood a peculiar looking shorebird of equivalent size, but with outlandish elephantine legs and bill. Something clicked in my memory; a picture, a description, a name, and I called out, "Boonsong, could it be a Thicknee?" Again we thumbed pages and it was listed as the Great-billed Thicknee (*Esacus magnirustris*), not a rare bird at all, for it is common in Australia and Malaysia, but a lifetime first for both Boonsong and myself.

Evening found us drawn up single file along an immense beach before the village of Bon Cneaw. It was our second night out and things were running smoothly. We were all standing before the makeshift table dipping up our supper of curry and rice, or were lounging on the sand eating. Villagers had gathered in a semicircle behind us to watch and darkness had just fallen. Being ultra modern, the expedition was provided with a gasoline driven generator to provide light for the rafts and tents (also attractive to insects). As the rafts had

been lined up, the cook shack was down stream with the others above. On the furthestmost raft a cook's helper was pouring gasoline from a five gallon can into a small container, ignorant of the fact that the river was carrying drip toward the cook shack where there were open fires in the cooking hibachis.

We were all brought to our feet as flame streaked up the river and the can burst in a great roar, enveloping man and paper dry raft. He threw the can and fell into the water where flames spread in a great pyramid and raced toward the opposite bank and tinder dry forest. Everyone threw sand upon the burning rafts and the flames were quickly extinguished with but little damage to rafts or equipment, and only singed eyebrows and hair on the cook's helper. The gasoline burned out before it reached the forest, and villagers came down hoping that this was an advertisement for a movie which we might have brought along and which they had never seen.

Later Boonsong and I visited the village and he chatted with young men seated on wooden benches along the main street enjoying relaxation in the moonlight streaming through graceful quiet coconut palms. Their subject of conversation he learned was that of men throughout the world; women. At a nearby shop the keeper offered us cigarettes of homegrown tobacco wrapped in banana leaves (surprisingly mild) and held a candlelight to my face for the benefit of the youngsters who had never beheld a red haired, sunburned Caucasian, (albino people as translated by Boonsong). The Wednesday morning "News" had the following comments to make:

PINGER'S DAILY NEWS

Vol. III

Morning Edition

Dec. 4, 1957

Today is the third day on the raft.

FORECAST

WEATHER: cool, bright, dry, and crisp

JOURNEY: Will encounter four small rapids in the afternoon. So, be ready, stone pickers, for your collections.

NEWS AND COMMENTS

December 3, 1957

FIRE AT BAN CNEAW TOW (OLD SHAN VILLAGE). Great fire burst in the river by accident at 7:00 P.M. during dinner time. Fortunately the rafts escaped the fire by miracle.

TEEN MAEW. The chief inspector (self appointed) reported two mysterious swimmers appeared along the rafts. It is suspected to become teen mawes (swimming thieves). So be careful - you have to watch your belongings.

SAW-RAW-TAW (Sura Thuen - illegal liquor). On the tour of the camps, two empty bottles of S.R.T. were found on the beach. The inspector was trying to find the culprits. Award will be given to informer.

NIGHT BIRD SEARCHER. There might have been many pretty night birdies in the village. The police reported night bird searchers at the village until 10:00 P.M.

Stone pickers find the glittering stones for a change if searched during nighttime.

December 4, 1957

COOK FROM SOUTH PACIFIC HAS ARRIVED. The cook specially ordered from the South Pacific Island has arrived, recovered and been ready for Stone Age cooking, South Pacific Style, today. Do not be surprised to find a sarong-man loitering on the beach - he is the cook.

Wednesday the valley narrowed, villages were left behind, the mountains pressed in upon the river, which had to hasten its pace to continue its work of carving the canyon. Sand bars were also left behind and with them many of the birds that we had enjoyed the day before. By the end of the day we had a total of only forty-four species and four hundred forty-nine individuals. The kingfishers are the glory of rivers in this part of the world and there had been five species with us all day Tuesday: Common, a tiny jewel of iridescent greens and blues, with a ruddy breast, smaller than a sparrow and almost hummingbird-like in its pursuit of a mate; Pied (*Ceryle rudis*), as large as our Belted Kingfisher, garbed in contrasting black and white; White-breasted (*Halcyon smyrnensis*), chocolate colored with a blue back and tail, and a contrasting white breast; Stork-billed (*Ramphalcyon capensis*), blue and gold with a brownish head and a very heavy coral beak; and Black-capped (*Halcyon pileata*), a deep indigo blue back with light underpart and jet black cap passing down over the eyes and nape, with a blood red bill. The Pied and Black-capped Kingfishers appeared to prefer the broader river and open valleys, but the other three were with us all they way, especially the White-breasted.

The bird thrills of the day included sighting ten of the gorgeous green and gold flicker-sized four-toed Golden Backed Woodpeckers (*Chrysocolaptes lucidus*), hitching up tree trunks along the river. They are gregarious and move in small flocks. We were first attracted to them by the peculiar unidentifiable call that they gave. We also made reacquaintance with old friends, the Anhinga

(*Anhinga rufa*) and the tiny Red-legged Falconet (*Microheirax caerulescens*). This sparrow-sized falcon hawks insects from the air and stoops down upon its prey with all of the zest and savageness of a Peregrine Falcon.

During the day our New Zealand and British ("stone age people" as dubbed by Boonsong) geologists decided that a barbecued pig would be tasty, so one was bartered and butchered along the way. Came evening and the pig was prepared as described in the "Daily News". Our geologist friends assured us that they knew this type of outdoor cookery. So they dug a pit in the sand and soon had a roaring fire going in it. The pig was cut into chunks and wrapped in banana leaves. Then, instead of letting the fire burn down and burying the meat in a hot bed of coals, they put the meat in the coals and kept the fire going. Result, cremated pig.

THE PINGERS DAILY NEWS

Vol. IV

Afternoon Edition

Dec. 4, 1957

Pig in the trench

Do not get me wrong, I say "pig in the trench" - not "dig in the trench" because this is a kind of very special food that will be prepared and sponsored by the famous Drs. Gaskell and Grindley.

In case you are doubtful, here is the text or recipe written by Dr. Grindley himself.

Polynesian Recipe for Cooking Pig (also applies for long pig)

1. Preparation of Pig

Procure one pig about one to two months after weaning. Kill pig and shave outside hair in boiling water, remove insides and head (can be used for separate dish). For a small oven divide pig into 8 sections (4 legs & 4 back & flank sections). Wrap each section of pig in flax or banana leaves - include water cress or spinach (puha) along with pig to give flavor.

2. Preparation oven (hangi) & cooking

This can be done several ways. The simplest method is to dig a trench or pit about 5 feet x 5 feet x 3 feet. Start a large fire using wood that burns slowly and gives good embers. Charcoal is even better. Heat several large, flat stones (non-spalling kind like igneous or metamorphic rocks). When red hot transfer to hangi and build base of fire with plenty of smaller hot stones and embers. Follow with hot sand spread thinly. Place wrapped pig sections on sand and follow with thin layer of sand. Build up with embers and transfer fire across on the hangi. Keep fire going but very slowly, otherwise pig will be incinerated on top side. Cook for about 4 hours. At the end of 4 hours dig up a piece to test

for tenderness. If cooked, dig up pieces of pig & distribute to ravenous members of party. If burnt, take off into the jungle at high speed.

Too much eating on this trip

Some Pingers told me we have too much eating on this trip. Well! What should we do. I don't know whether it is an insult or a compliment.

As you come to Thailand you should learn how to keep your stomach full throttled because we have nothing to offer you. I know if you are underfed during the trip you will probably be staggering ashore when we get to the Damsite.

It is an old Thai greeting when people met - "Kin Khaw Laew Rue Young?" meaning "Have you had your meal?" instead of "Sabai Dee Rue?" meaning "How are you?"

Thursday we continued through the canyon. We were in a mountain formation unique to my experience. It was not so massive and impressive as canyons of our west for the mountains in their rich browns and contrasting greens reminded us of the Adirondacks in fall. Rather it was the bizarre nature of the cliffs and rock formations. This was an ancient sea bed a limestone uplift in a monsoon climate where the weather is dry for six months, followed by six months of torrential rains, and the mountains were actually dissolving. The rain water seeping through the mantle of vegetation absorbing its load of organic carbides becomes a dilute carbonic acid which penetrates the cracks and crevices of folded strata and melts its way into the heart of the limestone. The mountains were obviously great swiss cheeses with caverns at all levels and in all directions. Every cliff face had cave openings evident and the cliffs themselves were covered with flowstone and great stalactites that hung from them like frozen Spanish moss. It was a speleologist's paradise.

All day long we saw evidence of elephants. Tracks followed the river on both sides and often crossed it, bamboo had been stripped where the pachyderms had fed, and sign was everywhere. We peered hopefully around each bend straining to sight them before they heard us and could slip into the dense bamboo that bordered the river. In the late afternoon we intercepted a band of langur monkeys that had come to the river to drink, but we surprised no elephants.

December 5, the birthday of the King of Thailand, was an occasion which demanded a celebration. We beached on a sandy shore crisscrossed by elephant tracks, and made camp. Miss Somphon had outdone herself, and during the day singing and laughter from the cook raft gave evidence of much activity. We had special curry this night, with a dessert of boiled, whole pumpkin filled with

tapioca pudding. Another delicacy was served which bears description. Short lengths of bamboo (12-18") were cut and filled with uncooked rice soaked in coconut milk. The end of the bamboo was plugged with plant fiber and the stalks were then leaned against a pole supported by forked sticks over a small fire. The bamboo receptacles were occasionally rotated for even cooking and within half an hour the rice had cooked thoroughly. To test the degree of "doneness" a stalk was removed and the wood peeled off by a knife, exposing the delicious nut flavored rice.

Following our banquet the crew from the cook shack chanted Siamese songs to the accompaniment of clapping and beating on pans while Somphon demonstrated Thai folk dances and we all joined in to dance on the sand 'neath the tropical moon so that our yells and laughter disturbed the quiet sighing of the Ping River and the silent elephant trails.

THE PINGER'S DAILY NEWS

Vol. 5

Dec. 8, 1957

Owing to the King's birthday yesterday we are behind with the news. The important events of the past 48 hours since our last issue have been connected with the King's Birthday Celebration.

Pig Cremation A pig was sacrificed and cremated on the night before the King's birthday. This is an ancient custom of the Polynesian people in the South Sea Islands and is guaranteed to ensure a successful celebration. All who inspected the remains in the morning will agree that the cremation was most efficiently conducted.

Banquet After secretive preparations extending over several hours, a banquet was produced by the cooks in the evening that exceeded all previous performances. For the benefit of those who have hazy memories we give the menu below.

Aperitif Mekhong & nuts

Hor d'Oevres Mirror Pork Burnt Chili Sauce & Dried Salt Beef

Dinner Meat Balls, Chap Chai and Rice

Dessert Pumpkin Custard & Caramel Sauce

Apres Bamboo Rice and Mekhong

Song and Dance After the banquet we were entertained by Jumchet & his Somphany orchestra with a programme of old Thai songs and dances. Later there was free for all dancing. Sagnuan, Sarong Man No. 1 & Bird Man No. 1 got off to a good start followed by Sarong Man No. 2, the two Malayan, and

the Siamese twins. Pumvarn Somphon & Jumchet showed us the steps and we thank them and the cooks for a memorable evening.

Progress of Journey Yesterday we made 18 miles from Wat Wok to Mae Tuen, passing through many rapids, a deserted village (800 years old), and many cliffs limestone draped with stalactites to which names such as Cat Cliff and the Elephant's Trumpet had been given. We expect to be at Yanhee Dam tomorrow p.m.

Reported by Sarong No. 2

Friday, the sixth, found us still between stalactite covered cliffs on the swiftening river. Before the day was over we had "shot" several rapids. In the deep blue canyon shadows we began the day to the clarion call of gibbons and disturbed more monkeys in search of their breakfast. A few moments after we had left camp we rounded a bend and on the beach was a group of men and boys skinning something before a fire. We pulled up to see what they had captured. It was a great soft-shelled river turtle with a carapace more than a yard in diameter. Boonsong bartered with the fishermen and came away with the carapace, plastron, and skull for his museum. The fishermen had families with them who were living in a leanto of bamboo.

Not much farther on we found the elephants; yes, they were work elephants. Thousands of teak logs had been stranded on beach and bar when the river floods receded at the end of the monsoon, and small elephants with their mahouts were pushing and pulling them back into the river toward the sawmills many miles below. Another item of biological interest during the day was the fifteen foot skin of a python stretched to dry at one of the teak workers camps.

Every birdman in thumbing through the books finds himself longing to see certain species in their native haunts. He conjures the experiences that might attend the search for such a species. So it was with me. I had watched hornbills in zoos and hoped for the day I could see them in the wild. Early this morning high in the glowing sunshine four great birds in V formation were flying from mountain peak to mountain peak. They looked like black swans with no heads, just a long neck ending bluntly. They were hornbills, possibly the Wreathed Hornbill (*Aceros undulatus*), but I was disappointed in that they were too high to distinguish even with good binoculars. The "headlessness" was due to the huge bills extended before them. But Saturday evening just moments before our trip was completed we saw one of this species resting quietly in a tree by the river.

Two other exquisite birds were seen during the day, a White-capped Redstart (*Phoenicurus leucocephalus*) and a Blue Whistling Thrush (*Myophonus caeruleus*). Both are thrushes, the first a small glossy black bird with crown and nape a shining white, rump, upper tail, belly, and flanks a rich maroon; the second, a robin-sized thrush almost entirely steel blue that gleamed in the sunlight. Both are solitary species, seen feeding along the water's edge on

boulders or rocky shores.

Probably the most characteristic sound of the whole trip, even more so than the cooing of doves or tolling of barbets, was the ringing raucous laughter of the Laughing Thrush. Not a thrush at all, but a member of the tropical family Timaliidae, it is almost jay-like. It was the White-Crested Laughing Thrush (*Garrulex leucolophus*) that guarded these hills. Troops of them fed amid the foliage or on the ground, or hopped from tree to tree on stiff rounded wings. They were the sentinels of the forest, raising an ear-splitting uproar at any intrusion.

This evening, our last away from civilization, was a quiet one, and we gathered around the campfire to talk and listen. The night was beautiful, but the mood was conducive to reverie, resulting in this ode:

THE PINGER'S DAILY NEWS

Vol. 6

Afternoon Edition

Dec. 6, 1957

Ping River Ode

Up stream down stream everybody come,
Join the P.S.C. and have a lot of fun.
Please leave your shoes and socks up the shore,
And you'll hear some juicy stories that you never heard before.
McClure watches birds at rest and on the wing,
Me, I'd rather sit and listen to them sing.
But when it comes to rocks and other similar things
I'd rather be upon the raft and were what it will bring.
Our Professor Brower is famed the wide world o'er;
But if he isn't careful he won't be any more.
Because he needs a head and other things like that,
And he's leaving his in pieces atop the bamboo raft.
Old boy Gaskell is a rascal as you know,
He-courts the Siamese girls and never lets them go.
He-sits by the fire every night along the way
And buzzes down the drink in a fine old English way.

After a short rapids Saturday morning the mountains fell away and we entered the broad valley which is immediately behind the Yanhee Dam. A fifty cent pool was passed around and we all made our guesses as to the time we would reach the damsite, won by Mrs. Shepard, who selected 4:15 P.M., the moment at which we passed the center of the dam-to-be.

With the valley came villages, cultivated fields, and the birds in evidence the first day were again with us, so the tally went up from thirty-seven species

the previous day to fifty-three. But even this last day was not without its bird thrills. At noon we selected a broad beach for our picnic and I tramped back into the floodplain forest. White-crested Laughing Thrushes were conspicuously ignoring me to center their uproar on a dense clump of bamboo. From it I flushed a Brown Fish Owl (*Ketupa zeylonensis*), large and cumbersome in daylight flight as a Great Horned Owl. In his escape he disturbed a band of ten glorious Black-naped Green Woodpeckers (*Picus canus*), which had been unseen and which seemed to explode from their tree trunks.

The addition of the Red-breasted Parakeet to our list brought to four the number of parrots we had seen: Blossom-headed, Rose-ringed (*Psittacula eupatria*), Slate-headed (*P. himalayana*); all lovely birds, and all so fast of flight that observing them meant, "There-they-go!" Other biological notes were mentioned in the last issue of our "Pinger's Daily News".

PINGER'S DAILY NEWS

Vol. No. 7

Saturday 7th Dec. 1957

Nature Notes

Moon

It will be full moon tonight (Sputnik again). (We saw satellites at sundown.)

Snakes

A hitch-hiker about 1 1/2 ft. long was found aboard raft No. 4; he made a useful addition to the soup.

Turtle

The largest turtle ever caught in the Ping River was seen at Kaeng Apnang. This animal was 1.18 meters in size and examination of its teeth (and gold fillings) indicated its age to be 253 years late Thonburi Period. This enormous beast is not only a record for fresh water soft shell turtle, but also the largest ever caught by rod and line. The Birdman No. 2 has carried all the head for medical purposes. The carapace and the under carriage will be sent to the British Museum by air-mail.

Changs

Several Changs (Elephants) were seen in Kaengs, rolling teak into the creek.

Cockerels

Cooks department report the finding of an egg (large) in one of the unfortunate cockerels. This is either another record or a miracle. The geologists regarded it as a new sub-species of *Fowlus domesticus*.

Navigation

The journey yesterday was slowed down by the obstructions caused by 3,000 teak logs which had failed to complete the passage down the river. Since 3,000 is a large proportion of the 7,000 dispatched, a great effort is being made to refloat the stranded logs. Meanwhile the navigable channel is made more difficult than usual and forward reconnaissance of some Kaengs is necessary.

ETA (Estimated Time of Arrive) Dam Site 1500 hours today. If it hadn't been for the logs we would have been there a dam site sooner.

Toward mid-afternoon the mountains began to close in upon us again and we were in a narrow channel between two uplifts when we reached the Yanhee Dam Site. This dam was to be 600 feet high and intended to form a lake extending the entire distance that we had covered in five days, about 180 kilometers. All of the cliffs, valleys, and forest that we had seen along the river were eventually buried beneath hundreds of feet of water. The lake would penetrate thousands of little valleys, and the very mountains themselves were saturated, since all of the lower caves became flooded as the water rose. The power generated has served much of Thailand, but the "draw downs" have destroyed the valleys and damaged the caves!

Saturday evening we camped once more on the river bank, for rest houses at the Dam Site had not been completed. We were served an excellent dinner (more curry and rice) by the engineers and officials of the construction company. Early Sunday morning we took a short trip into the spillway construction, and then loaded our impedimenta onto a bus for the four-hundred mile trip back to Bangkok. As we drove out of sight of the river, a flock of Hoopoe (*Upupa epops*) flushed from the roadside, another life first for me, bringing the total of the Ping River list for one week to ninety-five species and three thousand two hundred individuals.

28. The Tree



Two streams, the Gombak and the Selangor, from the mountains and jungles above Kuala Lumpur, join in the heart of the city; at whose junction a beautiful mosque was built nearly two centuries ago. Thirteen miles above the city cultivation gave way to the great rain forest, home of an occasional Leopard and Binturong and peopled by White-handed Gibbons, Siamangs, and Macaques. For two years I had threaded old trails regularly, trying to watch the host of living things,

often lying on my back, enticing leeches, while I studied the canopy above me. I became convinced that only a person with a hinged neck and telescopic eyes could hope to learn of canopy life from the ground. Dr. John Wyatt-Smith of the Malayan Forest Research Station helped me in the selection of a great tree to support a platform for such an aerial study and suggested that I obtain Swedish tree-climber, aluminum ladders to reach the heights.

At the base it was more than seven feet through and it did not have the immense buttresses to give it the greater girth of even lesser forest giants. Its massive brown bole towered almost untapering to 130 feet where it was still 4 feet in diameter and three great 30-inch limbs forked up and out to support a surprisingly scanty crown that topped nearly two hundred feet. The west side of the bole was free of lianas, but the east supported a tangle that eventually swept gracefully from giant limb to giant limb of the crown. Its crown rose to the crest of a mountain ridge behind it and its roots sought the thin soil on a hillside above a rocky stream.

This was "The Tree," a meranti *Anisoptera laevis* that we had selected to support a treetop platform from which I could watch the canopy life of the virgin tropical rain forest in the central range at two thousand feet above the tin mine strewn plain around Kuala Lumpur. The great trees of the tropical rain forests of Southeast Asia grow upon thin laterite soils, depending upon protection from winds in a mutual association with their neighbors and upon physical support at the soil level by spreading roots that become immense along lines of stress. These large roots extend from the trunk in several directions and may become massive. It is not clear to foresters how these buttresses develop; whether they grow where stresses are greatest or where they are least. Our meranti, for all its height and size, had small and unimpressive buttresses.

Came the day in July 1960 when 20 of the dove-tailing, 10 foot ladders were delivered, each weighing about 10 pounds, with a long chain to throw around the tree. We carried them down the steep mountain slope to the tree, a uniformed Malayan forester, a brown skinned aborigine, and I. Armed with hammers, wire, and spikes, we began assailing the tree. The first section was easy. It was placed between two buttresses, aimed up at the first limb protruding vaguely in the encompassing canopy above, and the chain carried around the trunk to be attached to a support at the top of the ladder. Right

then it began to appear that this job was not to be an easy one.

The vibrant forest around us seemed to watch and listen as we progressed. White-handed Gibbons and the shadowy black Siamangs hallooed from distant and nearby canopies. Green Barbets with their multicolored faces kept up their incessant monotones, a rufous breasted Common Shama sang his liquid notes from a shrub and the continuous chatter and whistles of a hundred kinds of bulbuls, babblers, fly-catchers, and other birds swirled about us. A few days before I had followed this trail and flushed a hen Argus Pheasant. The gorgeous cocks were regularly giving their clarion "wow-wows" from several stamping grounds (or leks) within a square mile of the tree. And the beautiful dark green Roulroul Partridge, the male with a crown of golden plumes and a somewhat drabber hen with several mottled chicks, had been seen along another path nearby.

The chains, so handy for northern woodsmen to swing around a slender pine were useless here. They could be swung out and around the bole, but vines and nearby saplings impeded their progress. Because of his lesser weight and greater agility, the aborigine climbed the vines and the second ladder was placed with its chain encircling the bole. Spikes were driven into the wood along side the ladder as additional support and heavy wire twisted between them. Then the third ladder and we were already thirty feet high and entering the lower edge of the first canopy above the shrub level. In a dense crowned sapling that I could almost touch I was later to see the Black-naped Blue Flycatcher and his mate feeding a spotted fledgling, while a flamboyant Red-rumped Trogon perched beneath them was giving his peculiar clucking hen-like call.

Working alternately, the Malay and I climbed and assembled the ladder, but the willing aborigine had to climb the vines each time to pass the stubborn chains around to us.

At fifty feet the forester was setting a ladder when I heard him pounding at the tree and looked up to see a mangled snake fall writhing to the ground. It was a small, poisonous tree pit viper (*Trimeresurus puniceus*), which is so perfectly marked in drab brown, as to be almost invisible as it crawls among the crevices of the bark. This was thought to be one of the rarest snakes in Malaya, and was only the fourth specimen reported. A year or so later, in a study in Pahang, a team of biologists followed a road clearing gang and took many of these snakes as they were shaken from the falling crowns. It is quite possible that pairs may live in such jungle giants as this one because after the platform was completed a second viper slept each day curled up in a corner beneath it. After six months it left, in search of the mate so destroyed, I thought.

The assault on this small viper ended the day's work for both of my helpers were afraid there might be more, and I was perturbed that the Malay had killed it without first calling my attention to it. He was in no danger because of the small size of the snake and its non-lethal poison, but treated it as snakes are treated the world over, with panic and violence.

The next day I put up two more sections with the aid of the aborigine, but his eyes were glassy with fatigue and the vines were becoming smaller, so

we called a halt.

The aborigines of Malaya are of many tribes and racial origins and are generally known by the Malays as Sakai, a term which they do not like. Preferring to be known as aborigines, these small, shy, but talented people know the forest and are fearless climbers of the trees, where they sometimes may be seen in the most unexpected places, harvesting wild durians or other fruit.

At fifty feet we were entering the second faunistic level from the forest floor; first, the shrub canopy, and now, the mid-canopy. It is the realm of Grey Cuckoo-shrikes, nervous Spotted Fantail Flycatchers, white Paradise Flycatchers with their flowing tails, and Fairy Bluebirds of jet black and sky blue.

A week or so later I continued assembling the ladder, with the aid of my Tamil friend and assistant, Soosi, as ground man. I used the tree-trimmers safety seat, a bowline-on-a-blight which provides a sling in which to sit. I tied one end of the rope to the section of ladder which I had just secured to the tree. A line from my belt kept me in contact with Soosi who tied ladders and wire to it as I needed them. Supported by my lifeline, I hauled a new section up and seated it on the end of the attached section. Then I climbed up a few rungs and wired the new section in place. Now I tied the other end of my seat rope to the new section, crept back down and undid the first line, and went on up the new section, wiring it in place. In this way I was secured from a fatal fall and in this way I inched up the tree.

At ninety feet I was in the third canopy, that of the medium trees which go up to 150 feet and above which the fourth or topmost canopy extended. Since the canopy of crowns in this type of forest is very irregular and broken, a fifty-foot tree may extend into sunlight and still its neighbors range on up to 200 feet. At ninety feet a heavy three-inch limb from an adjacent tree crossed the trunk of the *Anisoptera* and rubbed against it. If I cut it off as I hung precariously to the ladder, it might snap against me and pin me or sweep me off. If I put the ladder over it, it might wrench the ladder loose when the wind blew. I took the lesser of two evils and nailed the ladder over it. Later when I had more suitable support, I came back to saw it off.

As I climbed higher ants came more in evidence, big black ones with red heads. I began to remember the stories I had heard of parachutists stranded in treetops only to be eaten by vicious ants, but this species (*Polyrachis nigropilosa*) proved benign. They were my constant companions when the platform was completed, marching around the railings both day and night. By now I was swinging perilously like a spider on a web from the top of a five-storied building.

The eleventh section went into place. On this one a few months later the peculiar flattened flying gecko laid its equally peculiar eggs. These are always laid in pairs and look like a ping pong ball cut in half and the halves glued side by side to some hard surface. It takes ten weeks for these eggs to hatch. Two other clutches like this were found, one under the ninety foot platform and one on a fallen leaf.

As would be expected in such a forest of dizzy heights, the most effective means of travel would be by flight. A host of species have resorted to this,

most conspicuously the insects, birds, and bats. Others, less often seen, include the flying squirrels, flying lemurs, flying snakes, flying frogs, flying lizards, and this flying gecko. To allow for its gliding flight, it has wide, flattened feet, a flattened, flanged tail, and folds of flesh that almost encircle its body. These can be extended as membranous vanes.

At the fork of the great limbs above me a smaller branch had broken away and a colony of bees streamed in and out of the hollow. Vicious honey bees and some of the colonial wasps can be the forest's most deadly defenders. It is almost surely fatal if a swarm of such bees descends upon you and you cannot get help, but many other species, though smaller in size, will sting violently. One of our biologists was attacked as he passed the entrance of a small colony and fainted of shock before he could reach his car. So I began to make preparations, carrying a large bandanna to tie around my face should these bees prove hostile. If they should attack I hoped to scramble back down the ladder.

The 13th ladder just reached the knothole where the bees were working. I climbed it gingerly and began pounding the spikes in place. The bees ignored the intrusion and I heaved a sigh of relief. They were a non-stinging species of *Apis*, but I was never successful in collecting specimens. Here I was stopped! The three limbs separated at this point and bowed out so that I could not place the next section. I would have to hang suspended in space to do so and the ladder would be unclimbable since it would be on the underside of the limb. The vines had been ascending the opposite side of the tree with me, but now one sturdy looking vertical liana extended within reach above me and from it I could swing into the safety of the crotch. But would the vine hold me? I looked into the 130-ft. void beneath me and up at the spreading crown above, undid my two lifelines, grabbed the vine for support, and swung gasping and shaking into the crotch.

As my nerves settled down, I began to take stock of my surroundings. I was standing in a clump of several species of aerophytes which occupied the fork, the bees continued to stream in and out of their den, and before me lay the glorious panorama of the forest.

The selection of this particular tree had been fortunate. Its crown was so placed that the platform could command a view of all activity, close by in the surrounding crowns, or across the valley and away to verdant slopes extending to a crest several miles to the north. I called for two more sections of ladder. It was only necessary to stand the first of these in the fork of the tree and attach it to the bole continuing on up. Then place the second on top of that and I had reached the limit of the vertical shafts. The ladder was now complete; 15 sections (150 ft.) extending to the height of an eight story building.

As I worked, the canopy around me was filled with life. An adjacent *Anisoptera*, almost as immense as my tree, supported a great strangling fig (*Ficus sumatrana*) and it was in full fruit. Colorful barbets of three species, yellow and black and brown bulbuls of seven species, three species of green leafbirds, two kinds of green fruit pigeons, Fairy Bluebirds, even great black and white Rhinoceros Hornbills were continuously feeding and leaving,

returning and leaving. This fig tree fruited about every four months and was the focal point of many of my studies, and of those who came after me.

The *Anisoptera* was a sister tree to mine as was a third one a few yards beyond. These three were probably seedlings from some long dead parent, no remnants of which could be seen. This third tree, of many centuries, was undermined by water draining from a nearby roadway and fell at Christmas time two years later. The fig was almost as large as the meranti that supported it and had usurped most of its sunlight. After five years the *Anisoptera* collapsed under the sheer weight of its unfriendly visitor and the loss of this cornucopia affected the life patterns of the whole vertebrate population in the neighborhood. Only my tree stood up to the years.

On ensuing days a two-by-four inch beam supporting a pulley was nailed in place so that a 1/2 inch rope could provide an elevator for supplies. Cam was visiting us at the time and she and Soosi were helping me. Because of the height of the platform, I thought that double-block pulleys would be needed to hoist things to it. I was up in the crotch nailing the two-by-four in place and called to Cam and Soosi to thread the double blocks and send one up to me. Neither had seen a double-block before nor knew what to do with it. Wrathfully, I climbed down the eight stories and Soosi was apprehensive of my ire. But Cam who knew my volatile temper told him, "Oh! Don't worry! He will get over it immediately"! Which I did when they said that they had never seen a double-block before. A single block proved adequate, one which I nailed to the end of the two-by-four and we were in business.

The position of the limbs dictated the size and shape of the platform, which was triangular. Three heavy beams were hoisted up and these provided the framework to support it. Each beam was held in place by metal U-shaped straps which were made at a metal shop in Kuala Lumpur. The beams had to be secure, but also must be permitted to move since the three parts of the tree swayed and torqued in the wind, movement which would have torn rigid attachments free. About eight feet on a side the platform would now be extensive enough to accommodate three observers and their equipment. I never let more than three people up there while I controlled the study, because accidents could happen in such a confined place and I wanted no one toppling overboard. Of course, it was convenient to sit on the floor and hang your feet over while watching the activities of the forest life around you.

Two pie-shaped resting platforms were designed and prefabricated at the metal shop. These had metal railings and were provided with a wooden floor assembled later after the frames were hoisted into place and attached to the tree. The two platforms were placed at fifty and at the ninety foot levels and opened onto the ladder so that a climber could step easily from the ladder onto the platform. These were convenient as a place to rest during the long climb and also were in different canopies where the animal life could be watched.

Finally all was in readiness for the carpenter I had found who was not afraid to work on such a dizzy perch. I tied him to a safety line and in a few hours the platform was complete with a sturdy floor, railings, and a storage cabinet.

In the next three years I climbed 140 times to spend many wonderful hours recording the activity of the heavenly hosts that reside in the top of the forest. Ten species of mosquitoes came to lay eggs in the water containers that I provided for them. Thirteen species of little sweat bees, which do not sting, banqueted on my perspiration during the year. The pit viper slept under the platform in the company of harvestmen which had climbed up during the night. The long-legged harvestmen (we called them Daddy-long-legs as children in Illinois, phalangids to the biologist) live on the ground where they act as scavengers, eating small dead insects and possibly other organic matter. That these apparently terrestrial beings repaired to such heights surprised us and we wondered what part they played in the food chains up there. Flying Geckos got caught in an insect trap and I watched them glide into the canopy below when I released them. Cockroaches, beetles, and earwigs also got caught in my trap. In fact, nearly 300 species of insect were found at one time or another to tramp about or visit the platform. A Black-banded Squirrel learned to come each week for an offering of bananas. The gibbons, Siamangs, and leaf monkeys never did get used to me and always detoured around the platform when I was there. A flying snake sailed by one day, flying lizards always arrived about 10 o'clock to search the limbs for insects, a lovely chestnut colored marten passed along a limb beneath me, and during the months more than a hundred species of birds carried on their daily lives around me.

During these three years I was the primary observer from this aerie, although at times biologists from the University of Malaya would help. Aware that tigers and leopards were in this forest (I had tracked them and seen their kills), I walked gingerly among the trees in the predawn darkness of each Saturday morning to climb through the shadowy canopies dotted by glowing fireflies and be in the roost as the symphony of the dawn chorus opened.

Much was learned about the ecology of the canopy. We learned of the flowering and fruiting cycles of the trees that thrust their heads into and above this canopy. That some species fruited once a year, others twice, still others thrice. That individuals of the same species followed different time sequences in their fruiting. That the presence of fruit in the great fig trees controlled the movements of birds, mammals and insects which came to feed upon them. We learned that there were "roads" through the forest crown which the monkeys and gibbons habitually traveled and that assemblages of birds of many species fed together and traveled together, and that these flocks had territories. And many other bits of natural history which have been duly recorded in the scientific literature.

In a box on the platform was a log book to be signed only by those who were stalwart enough to climb to the perch, and during the years 97 volunteers including 9 women added their names to the list and enjoyed the thrill of seeing the forest through the eyes of the Serpent Eagles, the hornbills, or the giant squirrels.

Early in 1961 a young British biologist came to the lab and introduced himself as David Wells and that he had come from England to study the *Munia* or weaver finches. He was the 17th person to mount to my platform and did so regularly. As he was staying at a dormitory (college, they called it) still

managed by Dr. John Hendrickson, at the University of Malaya, I would drive by to take him up the mountain. I tried to arrive at the platform just at dawn so as not to miss the morning chorus and this entailed picking David up in predawn darkness. Usually he met me along the road entering the campus. A long standing rule is that field activity goes on, rain or shine. Tropical storms are usually short lived and I recall one morning when it was raining so heavily that the beams from the Jeep's lights hardly penetrated it. I drove in to the dormitory not seeing Dave standing drenched beneath a small tree by the roadside. Yet when we reached the tree the clouds had broken.

Dave's first climb was on 29 April 1961 and soon he was joined by Lord Medway, Gathorne, who made his first climb on 10 June 1961. The log book on the platform recorded who and when were visitors. David's last recording before he returned to England to finish his degree was in Feb. 1963, but Medway who had become head of the Department of Zoology held on and continued visiting the tree. He eventually made it one of the demanding field trips for his students. I took several of the MAPS leaders to it during our 1965 conference. Later David married a beautiful Indian girl and succeeded Medway as head of the department. He and I climbed, for my last climb, on 2 Oct. 1974, my 153 and his an unknown total. Like Medway he continued having his students make observations from this high perch, and through the years he and Medway have collaborated to greatly expand knowledge of these wonderful forests.

As always in such a story there must be a postscript. I left Malaya in 1963, but year after year students from the biology department of the university braved these heights as part of a field course. Year after year the tree, the ladder and I aged, but we remained sound. The platform weathered and new boards replaced the old, but the ladder stood fast and at least once each year I returned to Malaya to spend time watching and listening to my old friends in the tree tops. I made my last climb at the age of 64, and now "progress" was making its claim. That portion of the forest and its famous tree was scheduled to come down to make way for a highway, probably in 1977.

When its time came nothing was salvaged. No one was brave enough to climb up, disengage the ladder sections, and lower them to the ground. The whole thing came down as the forest was savaged to make room for the new east-west highway which I traveled in 1983, too chagrined to even look for remnants of my beloved tree or its neighbors.

[1959: Ecologic studies of Japanese encephalitis virus in Japan. IV. Avian infection. *Am. Jour. Trop. Med. & Hyg.* 8 (E.L. Buescher, W.F. Scherer, H.E. McClure, J.T. Moyer, M.X. Rosenberg, M. Yoshii, and Y. Okada); Ecologic studies of Japanese encephalitis virus in Japan. V. Avian factors. *American Journal trop. Med. Hyg.*, 8. (W.F. Scherer, E. L. Buescher and H. E. McClure). 1960: Report concerning the 12th conference of the International Council for bird protection, *Malayan Nature Journal* 10; Pingers Progress or: Birding on a bamboo raft. *Pacific Discovery*; 13 1961: Some birds of the Mae Ping River in Northern Thailand, *Natl. Hist. Bull. of the Siam Society* 20 (H.E. McClure and Boonsong Lekagul); Garden birds in Kuala Lumpur, *Malayan Nature Journal* 15: Batu Caves, Kuala Lumpur, *Nature Conservation in Western Malaysia*; Bird ringing in Asia, *Nature Conservation in Western Malaysia*; 1962 Ten years and 10,000 birds, *Bird-Banding* 33; Epidemiology of the arthropod-borne viral encephalitis in Kern County, California, *Univ. of Calif. Publications in Public Health* 4] (W.C. Reeves, W. McD. Hammon, W. A. Longshore, H. E. McClure and A. F. Geib)]

29. Forest Vignettes



A wide expanse of savannah slopes to a collar of forest in the background. In the foreground lies a narrow pond where a Snake Bird (*Anhinga*) sways on a twig, wings extended to dry. Six Dollar Birds hawk insects over the grass and water or sail on labored strokes to a nearby snag where they are joined by several loquacious Hill Mynas. Pied Hornbills call from a remnant forest to the left. Two great winged Giant Hornbills whoosh their way from a small grove to the nearby wall

of forest. Seven Wreathed Hornbills pass on hissing wings at a steady flap, female in the lead as is their wont, headed toward some rendezvous in the dense forest. Great grey Mountain Imperial Pigeons boom their sonorous voices in the forest, barbets rattle their monotonous cacophony from the forest canopy, while three giant Spine-tailed Swifts sweep by on speeding wings rigid as sails.

A lone Sambar Deer feeds in the late afternoon sun. Suddenly gray shapes materialize from an outcropping of the forest and five elephants come into the savannah, a bull, two cows, and two calves, one so small that it can hardly be seen in the tall Imperata grass. These newcomers halt at the savannah's edge and test the air with upraised trunks. Then they spread out to feed upon the grass and to toss it upon their shoulders or over their backs. To and fro they sweep through the grass feeding and easing gently down the slope. The deer watches them intently and another deer enters the field but stops to watch also, while a chest-winged and black-bodied Crow Pheasant launching from a *Eupatorium* twig sweeps across the back of the bull elephant and alights on another shrub beyond. The family of five reaches the bottom of the slope and both bull and cows trumpet several times to be answered by others deep in the forest. They turn without haste and enter the forest to the west. The Sambars drop their heads to feed and the great pasture becomes quiet again, disturbed only by the passing of swallows.

During the Miocene epoch, some 25 million years ago, the Himalayas and their side ranges were thrust up. Soils scrubbed from them by the monsoon rains poured south and east building new lands and new deltas. Geological evidence, recently recognized, has shown that tropical rain forests have shifted over the face of the earth. With the movements of continents have come changes in climate as they moved through climatic zones. In southeast Asia as the Indian continent, of unknown size and shape, moved north and east through the Indian ocean it was subject to the zones of climate evident then and habitats across it varied with these climates. Its presence west of the Sunda lands would have affected monsoon winds or their equivalents. But, where moisture and temperature permitted, the lands supported tropical rain forests and when India's contact with Asia created vast mountain ranges and adjacent alluvial lands these too were colonized by forest. Even before all of this happened there was forest. In fact, for the whole sixty million years of the

cenozoic period there have been lands that have been sheltered by tropical broad leaved forests. Such a vast history has permitted animal life to thrive and sustain itself in a myriad of ways.

Each year the trees increase in girth. But when a tree becomes ill it ceases to grow and when such a lack of growth is noted it can be predicted that the tree will die or possibly fall. Trees that are ill actually begin to shrink in girth, probably by desiccation or some other physiological function. If this tree dies, it could decay upright, limbs crashing down until only a stub remains and its loss would be replaced not by new trees so much as by continued growth in girth of the remaining ones so that if you determined the total area of wood in an acre (cross sections of all trees above four inches in diameter) the total would remain approximately the same after the loss of the tree as before.

If a jungle giant is a mature tree and falls, its place is so quickly replaced by additional growth that again the area of stumps remains about the same. There is probably some natural law relating to the area of crown, amount of photosynthesis performed by the trees and the permissible area occupied by the stems. This problem has been addressed by researchers and is often expressed as tons of wood. In a forest in central Malaya one plot had 522 tons of wood per hectare (2.47 acres) and another 367 tons. It was estimated that the wood above ground averaged 475 tons per hectare.

Foresters have found themselves endangered by these falling giants since when and where and which one cannot be predicted. A friend of mine accompanied by another forester were walking through the forest when a tree in front of them suddenly snapped at the roots. They ran in opposite directions but the other person was struck and killed by the massive crown. One morning in Malaya, Lord Medway and I were tramping down a long muddy slope. It was raining so hard that water squished out of the tops of our jungle boots. Marston Bates tells that he avoided this problem by removing his clothes when he heard a shower approaching, putting them into a plastic bag that he carried and proceeding in his shorts until the storm abated. But we were soaked and trudged along, flicking off the leeches that sought our blood and discussing the elements of the forest around us. In the distance we heard a tree crash and turned to that topic. I had watched them fall and there is measurable time between the loud report when the roots part and the stem stands poised for a few seconds before beginning its descent and tearing its way through the lower canopies. Often its wrapping of lianas and creepers is so great that they withhold it and it does not fall but clings drunkenly to its associates. Such a tree will ultimately fall as the strain kills the vines and they too part. So I felt that if you saw a tree start to fall you had a moment of decision as to which way to run for safety. We also noted that in the experience of both of us a tree did not fall during wind but during a lull or just after the storm had passed.

We approached the narrow valley beneath the mountain we had been descending. The wind died down and the forest became quiet except for the steady drip of millions of rivulets down trunks and limbs. There was a cannon-like report and just across the valley a tree before us began to fall toward us. I stayed the rush of my companion. "I believe it is just far enough away not

to reach us!" Ripping and roaring through the canopies it landed at our feet and we walked around it as it lay quivering in its return to its ancestors. Other trees not torn down with it shuddered and swayed back into the opening from which sunlight glittered as the storm passed.

In Khao Yai National Park (Thailand) there is a small, deep valley and a road crosses a stream there. In 1968, at dawn, I followed this road and found that the night before at least 15 elephants had come down the stream and played on the road. They had left muddy feet prints in all directions and I dubbed the place "the Elephant Walk". It was a wildlife thoroughfare and on subsequent observations I encountered a Malay bear, a wild dog, and the peculiar hog nosed badger.

Elephants must enjoy their pachydermic jokes. Some months later, further down the river, I found where the herd had come from the forest above and trailed down to the river. The slope was steep and muddy and beneath it a shallow pool in the river. The trail was eloquent in its story. The first elephant lost its footing and nearly fell as it slipped down the incline. The second elephant also slid, but sat down half way and scooted on down to the pool. This must have given the rest of the herd the idea for they simply sat on their broad bottoms and tobogganed down the hill into the water. What fun it must have been! They crossed the river and snacked at a ginger patch on their way on through the forest.

Dawn had brightened the shadows of the forest. The predawn boisterous and exuberant mimicry of the Racket-tailed Drongo had just closed as the morning chorus took up the forest's cacophony, soon to be joined by the joyous whoops of gibbons. A terrified scream rang forth from the thickets of a slope above us; the forest halted for a moment to listen. I cast an inquiring glance at my companion who quickly admitted, "I'm not going up there to find out!" We sauntered out, reveling in the beauties and discords of the tropical rain forest, both wondering in our mind's eyes if that one scream was the leopard or tiger kill of a deer.

Beautiful, populous, benign but instantaneously savage, this fragment of a vast rain forest that once extended in an almost unbroken belt around the waist of the earth, crowded there by the frigid ice ages, but once extending far into what are now the temperate zones. These great geological forests were and are the wombs spawning life and species both plant and animal for the world. The great incubators from which creatures, including man himself, penetrated the rest of the continents and rugged lands. Fragmented fossils, of tropical ferns in Greenland, of bulbuls in Europe, of hornbills from Germany, or trogons from France, all significant of tropical climes and vast crustal movements.

Savage yes; sometimes merciful. We were walking along the bed of a

narrow canyon deep in the forests of Malaya. Soosi, one of my companions climbed to a ledge and into the forest above me. "Doctor, come quickly!" He was gazing down at the still warm and bloody remains of a Binturong. The leopard probably lurked nearby watching us. This is the largest of the civets, a black arboreal giant sometimes seen feeding or sleeping in the high canopy. I examined and took the skull. An old animal, so old that his teeth were mere stubs. No match for the leopard though nearly of equal size. Tracks revealed that it had climbed down a tree and succumbed in a brief scuffle. No longer faced with a starving future, however, the binturong as an omnivore might have done well in this habitat of abundance, even though aged.

A rainbow of bright butterflies flitted along the corridors of a stream flowing shallowly over lava impregnated granite. They sought small seepage puddles high in organic salts leached from surrounding decaying vegetation. Black and green, blue and black, yellows and browns, scarlet to magenta, purest of white to shimmering black, they gathered in restless throngs about these tiny pools sucking the water up through their thread-like siphons and pumping intermittent streams from their posteriors. How fast what they were seeking was filtered from the brine.

Singly or in groups others sought animal droppings along the trails. Not those of the great herbivores as the gaurs or elephants, mainly masses of undigested plant fibers, but the more nutritious salt and protein impregnated scats of the predators. Here a beautiful day flying moth probed a recently passed scat of a wild dog. There a larger mass of concentrated hair searched by great swallowtails, that of a tiger. Careful examination of this interesting find revealed the hair and claws of the Asiatic Black Bear. That must have been a savage battle worth seeing. Yet during the years we found several tiger droppings filled with the hair and claws of bears. This attack of predator upon predator gave us pause to consider what it meant in the biological balances and imbalances in this forest.

Never discount the basis of folklore. In the vulgar vernacular of the street I had been warned, "If you come upon monkeys in the forest they will shit on you!" On another morning in another Malayan forest I was walking slowly up a mountain path deep beneath the canopy. A troupe of Long-tailed Macaques high above saw me as I turned a bend in the trail. With warning shouts (they are hunted here by aborigines for food) they dashed away through the canopy. Descending through the foliage came a thin rain of droppings. Startle a bird and it will defecate as it flies thus relieving itself of excess weight. The small turds were not aimed at me, rather the animals had defecated in their haste and urgency to leave. Then followed one of the little miracles of these forests. I had been working this area for more than an hour, watching all of the animal life and had not seen a single scarab or dung beetle. Suddenly they were there, flying in from the vegetation around me. Not the large ones that we have seen working a pile of cow dung, but tiny ones small enough to make use of these small droppings. They hurriedly chopped up each small pile of dung and rolled it into little balls, sometimes two beetles to a ball. These they rolled in the dust of the trail, either standing on their hind legs and pushing it along or standing on their front legs and rolling the ball with the back ones. They rolled

them to the leaves and debris at the side of the trail and promptly dug small tunnels into which they forced the balls, one to each tiny tunnel. The females entered the tunnels, laid an egg in the dung, and then pushed dirt into the hole, covering it completely. All of this took but a moment or two and then the beetles were away, flying in the direction that the monkeys had taken. In my amazement at this wonderful commensalism, I neglected to collect some of the beetles for positive identification, but they were gone and I never encountered them again.

In the vast canopy of the forest there are trailways, well marked routes of travel for the animals that use them. From my platform I could watch the traffic on these aerial thoroughfares. A lone Siamang would come up the slope, a band of Long Tailed Macaques go down the slope, a family of White-Handed Gibbons cross the valley, a beautiful, bi-colored, giant squirrel work slowly along the same route, etc. Once a beautiful marten passed along one of the cross trails at my height.

Do these travelers ever fall and if so what happens to them? Once in Thailand I was watching a Black Giant Squirrel feeding high in a fruiting dipterocarp. This is one of the world's most beautiful squirrels, nearly three feet long (84 cm., 30 plus inches) and weighing 3.5 lbs. (1.5 kilo), black above, rich rufous red beneath. The squirrel decided to try and reach a nearby tree which was across a hard, surfaced road. One lower limb extended partly over the road. The distance between the squirrel and this last haven before being dashed on the road was a vertical 80 feet. He launched into space with tail twirling, arms and legs extended and body flattened to maintain balance and direction, plummeted earthward just reaching the limb as he passed. It was a thrilling spectacle of timing, accuracy, and decision.

From my platform I saw two animals fall. The first was a Siamang. The Siamang is a large, black, heavy animal weighing up to thirty pounds (12.5 kg), enough to fracture slender, dried limbs. This one had been feeding in a nearby tree and moved through a crown in which there were several dead limbs. It was 150 feet to the soil beneath. Probably he was watching me rather than where he was going and swung his weight to a small dead limb which broke with a snap. He seemed suspended an instant and then plunged into the abyss below. He fell fully fifty feet before a limb passed close by, which he reached out and grasped, swinging on through the forest with hardly a break in the rhythm of his motion. Oddly enough it was from this same tree that a Cream-colored Giant Squirrel also fell. This too is a large animal, nearly as long and as heavy as the Black Giant Squirrel, and a beautiful cream color to pale tan throughout. It was walking along the slender limbs when a decayed one gave way and it sank to the forest below. Being smaller and without the reach of the Siamang it fell further before a branch passed which it could catch, regain its balance, and run on through the canopy. A fall all the way to the floor must be a very rare thing for these arboreal creatures.

I was lying on my back on a trail in Malaya, head resting on my topi and

watching through binoculars the antics of clown-like Black and Yellow Broadbills feeding and calling high above me. I had learned to spare my neck by observing from this prone position since most of the action was a hundred or more feet above me. An occasional leech benefited by my position and once a startled Mouse Deer ran past me (close enough to have been touched). As I watched the broadbills I was listening to a family of Siamang feeding higher up the slope, and hoping that they would come closer. This they did, swinging slowly among the limbs and conversing softly as they watched the foliage around them. One by one they passed, five of them using almost identical limbs and handholds and as the sixth swayed by one arm high above me, it happened to look down. Seemingly suspended in air it gaped at me. I could almost see on its face what went on in its mind. "Gee, that looks like a man down there. By golly, it is a man! Aw! Aw! better get out of here!" Turning, it retreated, not pell mell in haste, but using the same limbs and handholds that it and the others had used. When it was no longer in sight of me, it went around to join the animals in the valley below. It was then that I learned that such creatures of the canopy know the safe passageways.

Ask anyone about monkeys and their distribution and you will be assured that they are tropical. But one macaque, "The Snow Monkey", is native to Japan. No one knows how they came to this cold climate, possibly they were isolated there when the ice ages refrigerated warmer climes to the west. This large macaque is revered in Japanese art and folk lore, and still survives cold winters in parts of Honshu. In the Chiba Peninsula opposite Tokyo several bands were still present in 1956 and one weekend in the late summer Jiro Kikkawa (now well known as the head of the department of zoology at Queensland University in Australia) and I went to Chiba to explore for them. We traveled from village to village inquiring of them until we were informed that they were in the nearby hills. After a two day search we did see them feeding among persimmon trees across the valley from us.

Lucy was having a bridge club party that Saturday evening and when one of the ladies asked about me she replied, "Oh, he is over in Chiba looking for monkeys!" A voice from across the room said, "You will believe anything your husband tells you?!"

As I watched the activities of a band of the smaller Long-tailed Macaques in our backyard in Kuala Lumpur in 1963, I was reminded of this incident.

[1962: Bird ringing in Malaya. The Ring 30-31; What can I expect to see? Malayan Nature Journal 16. 1963: English vernacular names of the birds of the Malaysian Subregion. Malayan Nature Journal 17; Birds and the epidemiology of Japanese Encephalitis. Proceed XIIIth Inter. Ornith. Cong.; Some bird "rarities". Malayan Nature Journal 17; Northern visitors to Malaya. Malayan Nature Journal 17; Bird Report. Malayan Nature Journal 17 (Lord Medway, D.R. Wells, F.G.H. Allen, C.A. Keel, H.E. McClure, J.B. Mitchell, K.W. Scriven, G.A. Watson, M.A. Webster); Is this one of the rarest birds in the World? Malayan Nature Journal; 17 A wounded tapir. Malayan Nature Journal 17. 1964: Some observations of primates in climax Dipterocarp forest near Kuala Lumpur, Malaya. Primates 5; Avian bionomics in Malaya: 1. the avifauna above 5000 ft. altitude at Mount Brinchang, Pahang. Bird-Banding 35; A thrush rediscovered. Animals.]

The origin of the band was not determined but it probably came from deep within the rubber plantations or from the Lake Gardens Park about a half mile away. The terrain about our garden was hilltop rubber on the east and houses with large lawns and few trees on the west. A road, Jalan Negri Sembilan, extended along the crest, dividing the rubber and bordering weed trees from the gardens. The macaques used the rubber and trees, but did not cross the road except to steal sugar cane or other delicacies. Most of the home owners had dogs which discouraged the monkey invasions.

When the band first arrived it was made up of a prime male and 8 females. In February all 8 were carrying young. There were about ten other monkeys in the area, probably juveniles or unbred females. By the first of March the females were weaning their young; only four were nursing, and by the end of the month all young were weaned and becoming independent.

April 9 a male had joined the band and was challenging the patriarch. They were fighting heavily. The patriarch had a chest wound and the challenger face and shoulder wounds. The females were worried and nervous. Only four were carrying babies. The juveniles took no part in the hostilities and avoided the combatants.

A week later it appeared that the challenger had gained supremacy for he was with the band and was copulating with the females that presented to him; two within a ten minute period. The band was split between the two males by April 22, but stayed in the proximity of each other. However, the following day the patriarch had them all together (17 animals) and was copulating as females presented. The battle resumed and on April 29 the patriarch was alone, suffering with a broken right fang, two long cuts on his left leg, and a scar on his shoulder.

The following week there were 30 monkeys present, two bands, the two males probably in truce, and no new wounds appeared on either. One female was with a dependent baby. Two days later the band was broken again, one with the challenger and several females were showing pregnancy with swollen breasts. The following day the patriarch was seen alone and most of his wounds were healing.

May 7, the band was back at the garden under the protection of the patriarch. Now he had his upper lip torn away and hanging loosely, exposing his incisors and jowl on the left. He was, never the less, copulating with the females that presented to him. Most of the females were pregnant with enlarged breasts. Young males among the peripheral crowd showed enlarging testes.

Ten days later, the patriarch now designated as Split-lip had four females and eight juveniles with him and his wounds were healing. The challenger had the remainder of the band grouped about a hundred meters away.

Within a week Split-lip controlled eight or nine females and 12 to 14 juveniles, but he was challenging and chasing the young males, and intermittently copulating roughly with females.

During June there was still much fighting. Sometimes the band slept in a nearby rain tree but were noisy and chattering during the night. Split-lip was retaining seven females and 12 young with him. The Challenger had a scar on

his right side, but no new wounds. Split-lip did not let him feed and chased him, but even so he tried to copulated with each female that got near to him.

It now appeared that Split-lip had maintained his supremacy, but that he was unable to keep new blood out of his brood. At least one of the maturing young males succeeded in inseminating females, and possibly two animals were back-dooring him. The act of maintaining his harem was difficult and almost fatal and it appeared doubtful that he could maintain his position through another breeding season.

Ants are so highly evolved that they have related to many creatures. They are rugged and ferocious protectors of whatever they want or need and stories about military ant columns moving through the forests of Africa are in the journals of almost every explorer. In Southeast Asian forests this particular niche is not filled. There are hunting ants, but they move about in small parties of from a few to a few hundred, capturing and tearing to bits any prey that they can overpower. Other species are pastoral with herds of scale insects, aphids, or other small colonial plant sucking forms. In Malaya one species of large soft-bodied scale often covers the stem upon which it is feeding and if the plant withers its attendant ants will carry young to new and tender twigs or plants.

As I walked through the forest I came upon such a plant infested by a black aphid and with it were its attendants, a black ant. These ants were preventing almost all of the aphid's parasites or predators from attacking them and the aphids were thriving, as fat and lazy as pampered cattle. Such insects draw from the plant the sap flowing in its veins and after digestion the waste is passed as a droplet. Their digestive enzymes are not efficient enough to remove all of the sugars, or else the sugars are byproducts, and it is nectar for the ants. Stroking the aphid with its antennae, the ant stimulates it to pass the liquid. (In some species of aphids special glands have developed to provided this ambrosia.) Having drunk the fluid, the ant returns to the hill where it encounters other ants. These are bottles or storage jars. They drink from the milk maid (these workers are all female), their abdomens distending into small flasks, and they hang from the roof of the storage chambers. Other ants with

[1964: An Asian bird-banders Manual. Migratory Animal Pathological Survey; Host distribution of nasal mites (Acarina) of birds in Malaysia. Federation Museum Jr. IX (M. Nadchatram, H.E. McClure, Lim Kee Chong). 1965: Comparison of the periods of residency of some migrant birds common to Japan and Malaya. Misc. Reports Yamashina's Institute for Ornith. and Zool.4; Microcosms of Batu Caves. Malayan Nature Journal 19; Avian bionomics of Malaya 2. The effect of forest destruction upon a local population. Bird Banding 36 (H.E. McClure and Hussein bin Othman). 1966: Some observations of vertebrate fauna of the Nebraska Sandhills, 1941 through 1943. Nebraska Bird. Review 34; Tale of two tail feathers. Animals 8; An International study of birds in Asia. Malayan Forester; Death on the highway. Malayan Nature Journal 19; An Asian bird-banders manual revised. Migratory Animal Pathological Survey; Flowering, fruiting, and Animals in the canopy of a tropical rain forest. Malayan Forester XXIX; Ecological aspects of the blood parasitology of Malaysian birds. Proceed. First Intern. Congress Parasitology (M. Laird and H.E. McClure)]

duties that require them to remain within the colony come to these bottles for refreshment. They tap the flask which regurgitates a drop for their pleasure.

During its return from the herd a milk maid may encounter a hungry ant and after an exchange of antenna touching, the milk maid feeds the other. In the tropics such a benign and efficient system would not go unnoticed by other animals and they would learn to benefit by it. And so it is! A very beautiful butterfly, much larger than the ants, but still vulnerable if they should attack en masse, has learned the trick. It alights gently upon the twig inhabited by cows and attendants, being careful where it places its feet and with its uncoiled mouthparts taps the antennae of the milk-maids and receives a drink. There is some alteration of the fluid in the ant's stomach so the butterfly drinks from it rather than directly from the aphids.

Another denizen has also learned the code, a mosquito. This one also alights among the ants which are almost as large as it is and induces them to relinquish some of the nectar. Such a herd may have several mosquitoes hovering above it.

Not all of the proceeds from the aphids are utilized by the ants and a fine mist of sweetened rain may fall to leaves beneath. The leaves become shiny with the sticky film, and spores of a black mold, called sooty mold, fall upon it and germinate. Gradually the leaf becomes covered with this black encrustation. Soon another participant appears in the form of small, soft-bodied, fungus and lichen eating insects known as psocids. They represent a very large family of many species in these forests, and all are delicate, with pastel colors and lightly veined wings. They are sociable insects, but not as social as the termites which they resemble, having large heads and a pert attitude which makes them distinctive. Like the termites and ants they have castes, winged ones which may be males and females, and a wingless caste, usually females. The wingless females practice what is called parthenogenesis, each female laying eggs which in turn hatch into more females. They eat the sooty mold generation after generation gradually harvesting it from the leaf. If the ants should move their cows, the food supply becomes exhausted and the psocids may not survive, but the winged females have mated and can search for new locations of fungi to start new colonies. To protect themselves and their eggs, some species spin fine webs beneath which they hide. This food chain can become more involved for there are tiny wasps that parasitize the psocids and predators that eat them and things that attack the butterfly and the ants. And if we revert to the mosquitoes there are peculiar spring-tailed protozoa that live on the backs of their larvae in the pools where they breed and other species of mosquitoes whose larvae are predatory, and on and on.

Although these tropical Asian forests teem with mammals of all sizes, it is the birds that are conspicuous by sight and call. Their colorful skins rest in numerous museums where they have been measured, catalogued, and described but knowledge about their intimate lives is generally lacking.

There is a large family of tropical Old World babblers that makes up the

bulk of the species and populations in many forests, but only one species has reached the New World, the Wrentit of the west coast.

Among these babblers are robin or jay-sized birds of the genus *Garrulaz*, the laughing thrushes. It is a large genus of more than fifty species many of which are among the worlds most accomplished singers (the Hwamie, White-cheek laughing thrush, Greater Necklaced laughing thrush, etc.). Many are drab, some very colorful, and the bulk are forest species at many altitudes. At the upper edge of the dipterocarp forests in S. E. Asia and ranging on into the ericaceous cloud forests are two, the Red-headed and the Chestnut-capped. They are so similar that it takes some expertise to separate them quickly as must be done in the fleeting glimpses that one gets.

At the peak of Mt. Brinchang in Malaya is a radio relay station which served as a base for many of our banding expeditions to that altitude, 6000 feet. It was surrounded by a high woven wire fence, illuminated each night by brilliant floodlights. In season these lights attracted a multitude of insects, massive sphinx moths, beautiful noctuids and bombycylids, and great beetles as well as cicadas of various sizes plus numerous lesser species. Each morning at dawn birds came up the mountain to glean these insects, among them some Red-headed Laughing Thrushes. Admittedly, this was an artificial situation creating demands and stresses upon the birds which they would not ordinarily have in their normally unlighted forests below. With abundant food came crowding to the limits of their acceptable territoriality.

In January 1959 in addition to the numbered British aluminum rings, I put a band of color on some of the Laughing Thrushes. One each was tagged on the left leg with red, yellow, white, blue, or pink rings. In June I marked three more birds on the right with red, yellow, and white. And this is what happened!

In June at dawn, about 0630, as light was beginning to filter through the clouds that nightly engulfed the peak, eight Red-headed Laughing Thrushes came from different directions to see what tidbits were available. With these birds was Blue L and White L.

October of the same year Red R was now present as well as White R, also a banded but not color marked bird and five or six others. They showed some urgency in their exploration, hurrying from light to light. On the first day of observations the first bird to arrive at dawn was unmarked. The banded one was the fifth to arrive. The next day Red R was second to arrive. On the third day an unbanded bird beat them all and Red R came in seventh, but the fourth morning found White R first.

Four months later eight unbanded birds came each of the first three mornings. But on the fourth dawn Blue L arrived with two well grown fledglings and these he fed pieces of moths that he (or she) broke up. Sex is difficult to tell in these birds and I never was sure which ones had been color banded. The following morning Blue L was among the first birds to arrive, sans the youngsters. In my notes I wrote, "they walk and do not hop", and later I recorded, "they hop and don't walk", indicating that they used both methods of locomotion. Although they resembled Brown Towhees of California in their color and confiding actions, I never saw them scratch for food. They dug with

the beak and turned over leaves to peer beneath for missed morsels. Any insect too large to swallow they beat to pieces.

We returned to the mountain top 18 months after I color marked these birds. On the second morning Blue L arrived third for the morning feed and Red R sixth. The next morning Blue L was third and Red R came in tenth. possibly Red R had to come from further down the hill than Blue L or maybe Blue L wouldn't let him come any sooner. Conflict had developed among the unbanded birds. They puffed up their feathers, stood high on their toes, and strutted cock-like in circles around one another while uttering a rasping but musical note. They glared and postured, or hopped stiff legged from the field of confrontation.

By the fifth morning it was evident that courtship was in progress. Pink L and a ringed bird were first, then Blue L and four others. At least three of the originally eight color marked birds were still using the lights as a food source. The courtship display was a lateral one; feathers puffed, tail spread, head erect, eye disc expanded, the male hopped stiffly around the female while uttering a soft chattering call. This might be done several times before both birds would be distracted by the presence of others or by the availability of food and turn away.

December 1960, two years from the time he was marked, Blue L was still present with about four others. They had now divided the area of the peak around the buildings and lawns into territories. Blue L and a mate were to the south near the gate while two unbanded birds commanded the lights to the north. Blue L and mate had trouble defending their domain for soon after their arrival an unbanded pair came and by posturing, spreading their wings, calling, and chasing, they drove Blue L and mate from the scene. Further conflict arose the next morning when Blue L and mate arrived from the east side of the peak to be confronted by an unbanded pair from the west side. They had at it, hopping, posturing, and chattering, and this time Blue L was successful and the west pair retreated to their brush. Insects were at a premium at this time for in the evenings there were very few around the lights, so the laughing thrushes remained only a few moments to ascertain this paucity and then retired to their respective hillsides.

In May 1961, more than 30 months old, Red R and Blue L sparred daily for the bounty of the hill top. Both now had mates and contested the territory with each other as well as with an unmarked pair from the west side. Red R had fledglings that he was feeding and dawn had hardly lightened the clouds enough to be able to see when he and his mate bounded from the forest of the east and hopped from the vicinity of one lamp to another to get firsts at the larder. Blue L and mate and the unmarked pair arrived. The males spread tails, postured to each other, and tried to out stare their opponents. They were so equal in status and prowess that at one time one would give way and at another, the other.

Six months later Red R was still defending his territory at the south end of the compound and among six unmarked birds Yellow R made its appearance, unseen since captured two years before. There was the usual posturing and competing, and it looked like Yellow R was now the mate of

Red R. One morning an unbanded bird arrived first, from the west. Red R came from the east, jousted with it, and drove it from the spoils. He then fed alone until Yellow R arrived from the east followed by two unbanded birds. They could have been juveniles from a recent nesting.

March 1962, we had now piled up 39 months and Red R was still with us. White L also appeared and was 39 or 40 months old for it had been a juvenile when ringed in January 1959. There was an abundance of insects beneath the lights and an unbanded individual gathered mouthfuls of moths to take to nestlings somewhere on the west slope. Red R also had nestlings in some hidden place on the east slope. First he collected small moths to take to the nest. Upon returning he pounced upon a large noctuid (underwing moth) and holding it down with his right foot proceeded to dismember it. He ate the egg filled abdomen and then carried the remainder to the nest.

I did not find these nests, but other observers have described them as a deep cup of woven dry leaves, plant fibers, and rootlets. It is a fairly large nest about 13 cm. across the cup and usually placed two meters or less above the ground. The eggs are a light blue with a few blackish freckles.

On another morning Red R made the rounds of the lights but found no satisfactory game so returned to his territory on the east slope. An unbanded bird arrived and found a large cicada clinging to the fence. This it knocked down and dismembered before carrying it away.

One of the unbanded birds may have been younger than or more aggressive than Red R. Each morning Red R would arrive early and make the rounds only to have to give way to and retreat before the other and he usually left at a run.

Other work kept me from the peak for a year. I wish that I could say that Red R and the others of our friends were still present at this visit, but none were found. The little epic of conflict for insects in a man-made larder was finished. Other Red-headed Laughing Thrushes had taken their places. In summary we learned that White R had survived at least five months after being marked, Pink L 19 months, Blue L 29 months, Yellow R 30 months, Red R 33 months, and White L put in its appearance after 39 months. Only White L was juvenile when ringed so all of the others could have been much older than these records show. Among the other birds that we banded here was a Red-rumped Trogon, which a careless collector let die in a net 14 years later. All of these records of ages of tropical birds were among the first for this region.

Somebody said that they look as though they had been designed by a committee and I am sure that they were assembled by unskilled labor, for the remaining 45 Hornbill species in the world are among the most bizarre and fascinating of the birds. Relics of an archaic history extending back sixty million years to the end of the cretaceous or the first of the cenozoic, they are a mixture of specialization and antiquation seen in few other groups of birds.

Taxonomists group seven heterogeneous families in one large order, the Coraciiformes, on the basis that they have the three forward toes fused at the

base; there is a special arrangement of the palatine bones in the head; and a different arrangement of the feather tracts. Most species nest in cavities in the ground or in trees which they usurp from other species or which they dig themselves; and they lay white eggs. This motley assemblage includes the kingfishers, todies (of the West Indies), motmots (of South and Central America), bee-eaters, rollers, hoopoes, and hornbills. Of these, the hornbills may be of the most ancient origin.

The hornbill-like form originated sometime before the Eocene, for primitive hornbill fossils have been found in Eocene deposits in Europe. They could have originated anywhere in the warm forests of Africa or Eurasia in these ancient times and may have been widespread over the continents before being restricted by climate to the equally restricted tropical forests of later geological eras.

In brief, Hornbills are large birds, the smallest, 15 inches, long, 40 centimeters, is still large by bird standards; to an immense 5 ft. (150 cm), ungainly, awkward, weak fliers, generally omnivorous feeders, which nest in sociable groups. Their colors are dull, usually blacks, whites, or browns, with colored skin about the head and neck, and with ornamental casques on their large bills.

They have been collected, catalogued, illustrated, kept as pets, and a few species have been studied intensively, but in general much concerning their life histories is unknown and rapidly becoming unknowable as their forest haunts are being reduced to lumber and paper pulp. Dr. Alan Kemp's work with Ground Hornbills in South Africa and Pilai Poonswad's studies with forest species in Thailand have done much to unravel the life skeins of these birds.

In all species the bill is greatly out of proportion to the rest of the body. Long, downcurved or straight and ornamented in most species with a casque of varying proportions. In several species the casque is a simple raised crest or a lump, but in the Rhinoceros Hornbill (*Buceros rhinoceros*) it becomes a great curved thrust resembling a banana. In the young of this species the yellow casque extends straight forward, resembling a carrot, but as the bird ages its casque continues to grow. As it grows the tip turns up but does not reach the magnificent proportions seen in the males for several years. Another spectacular decoration adorns the bill of the Great Hornbill (*Buceros bicornis*). Here a plateau-like casque becomes higher and higher, turning up at the forward end into two points from which it derives its latin name, *bicornus*, two horns. This great bill requires four or five years to reach maximum proportions. Even though these casques are large and top heavy, they are filled with spongy parenchymatous tissue to lighten them. In one species only, the Helmeted Hornbill (*Rhinoplax vigil*), does the casque take on a heavy, ivory texture and in the forward end the "ivory" becomes about an inch (4 cm) thick. It is of such hardness and dense texture that for centuries it has been in demand by Chinese ivory carvers for fine art work; called Ho-ting.

Most species have crests or mantles of feathers which they can raise or lower, and in some, as the White-crested Hornbill (*Berenicornis comatus*), the crest remains as a corona of feathers above the head. In some species the casque appears to have evolved so rapidly that the feather evolution could not

keep up with it. In the Great, Rhinoceros and Bushy-crested (*Anorrhinus galeritus*) the head feathers have been pushed aside by the casque in disorderly disarray. As the bill evolved and became larger and more ornate, the nostrils were pushed upward and back, and in some species nearly closed. The upper and lower mandibles in others are down-curved or serrated so that the edges do not meet uniformly, permitting the bird to breath through its mouth as well as its nostrils. Not only have the feathers and nostrils been affected by this phenomenal growth of the casque, but the tongue was overlooked. It would have had to have been gigantic to extend to or beyond the tip of such a bill. Instead their tongues are little stubs at the back of the throat. To swallow its food a hornbill must throw the morsel in the air and catch it, or toss it back into the throat where the tongue is located.

The bill is strong, powerful, and hard, and grows constantly during the life of the bird. Caging the larger species requires heavy wire for the bill can clip chicken-wire mesh like a good pair of shears; and having made a large flap, the bird will pull the wire in and escape through the resulting hole.

Current thinking relative to dinosaurs considers two possibilities. One, that dinosaurs were warm blooded, but that because of this body heat and the difficulty of maintaining it with no surface protection, they had to be large. There were no small dinosaurs to fill the niches of mice and creepers. Secondly, those off shoots of dinosaur or pre-dinosaur stems that could become small and enter such niches developed hair for covering and became mammals and pteranodons. This left only feathers for the dinosaurs to develop if they were to become small. The scales of lizards overlap like shingles; they provide physical protection, but are dense and offer little protection from loss of heat. The pre-reptilian ancestors that spawned the dinosaurs retained this condition although many dinosaur hides appear to have been leathery instead of horny or scaly. So when the smaller and swifter dinosaurs running on their hind legs with their tails raised behind them like a Roadrunner began developing feathers from these scales, the feathers too lay over the body like shingles. When these feathers diversified into primary, secondary, tertiary, and body or contour feathers, they're offered nearly perfect insulation against heat loss and the warding off of heat. By attaching muscles to them they could be raised or lowered to facilitate this heat regulation, and then the dinosaurs could become smaller and smaller. They were no longer dinosaurs anymore, but had become birds. The Czerka's (Dinosaurs, Global View, 1992) present other views about this.

Somewhere in this process the machinery got stuck and resulted in hornbills. The feathers are not soft and lush as those of an owl or songbird, for the soft body feathers are entirely lacking. Spread the feathers of the back or breast and there is skin; no layer of densely packed body or down feathers between or beneath the shiny shafts of the outer feathers. The belly and some contour feathers have down bases, but true down feathers beneath or among the contour feathers seem to be missing. What this loose harsh feather covering means is that the bird can't stand extremes of temperature. Hornbills are shade loving birds, especially those of S.E. Asia. Unknowing owners who have tethered their pets out for a bit of sunshine have found them dead or dying in

a very few moments. They just can't keep the heat out, or in for that matter, and they shiver when exposed to even mild coolness. In the past, hornbills developed primary and secondary feathers and the contour feathers of the body, but not the soft downy feathers for insulation. Having evolved in warm forests where it was often very warm, their needs were not insulation against the cold, but rather some form of heat radiation. To solve this problem the ornamentation of the bill was put to use. Light as it is, the casque is lined with a network of tissue supplied with numerous blood vessels. When the bird is active or is hot the casque also becomes hot thereby rapidly radiating heat from it.

In many species of birds, ducks, shorebirds, and others, there is an oil gland at the base of the tail, the oil from which is used to anoint the feathers and reduce wetting. In Hornbills, especially the Great and other large species, this gland has lost its function as an oiler and has become a paint pot. In the Great it secretes yellow paint which is used to color the white bars of the wings and to dye the casque and white feathers in the head a yellow or orange. But in making his vain modification, the hornbill lost its ability to shed water. Evolution forgot to take this into consideration for we have birds that live in forests subject to heavy rains, and rains can be cold, and they can't shed water. So what do they do? They get wet! During a torrential tropical shower you will see hornbills perched on a limb, bill pointed skyward, tail downward with water streaming off the tip of the tail, or the bill will sag and water pour from the tip of it. Soaked to the skin, the bird shivers and shakes. Even though roosting in large trees offering some protection, they must be miserable after a night of rains. Like their dinosaur forefathers, Hornbills have to be big, their heating and cooling systems are not designed for little fellows. Even so they love to bathe. Like hummingbirds or sunbirds which bathe on a wet leaf, the Hornbill takes a bath when it comes along and this means in the rain. If it hasn't rained for several days, the bird hops onto an exposed branch and has a wonderful time flopping and fluttering in the heaviest downpour. Some species wait until the rain is over and then dance and shake and enjoy the bath. To dry, they shake, preen, and spread in the sun like a cormorant. Conversely, if it has been cloudy and cool for a few days, at a break in the clouds the birds will move into the sun and spread their immense wings and tails.

To continue with the feathers. If the bird-like dinosaurs developed feathers for insulation, flight was probably an incidental result. The feathers got longer and longer as the dinosaurs found that they could glide or flutter to overtake their prey, and certain feathers were more effective in this so the primary wing and tail feathers enlarged and we had flight. To support these flight feathers, the bones of the hand were fused and the tactile use of the fingers lost. In more highly evolved birds both upper and under coverts, or small feathers, evolved to cover the bases of the large wing primaries and secondaries. These prevented loss of airlift by air flow around or between the large quills. With the Hornbills this did not happen and they have upper covers but no under covers, especially the larger species. The smaller species are more agile and dash with quick wing beats among the foliage with little wing whistle. But the other great birds fly with a flap, flap, flap, glide; flap, flap, flap, glide

(the number of flaps and the length of the glide depending upon the species) while all of the time wind whistles and groans through the gaps at the bases of their primaries and their approach is heralded by a freight-train-like roar. No wonder they aren't migratory, they have enough trouble getting from tree to tree. Some species are capable of sustained flight for several miles, but over open country should a lone tree show up, they stop in it for a rest.

Once we have this monster in locomotion, how are we going to stop it? There are more ludicrous modifications to take care of this problem. Even among the smaller species, the legs are short, very thick, and heavy. The feet are large, thick, and flat footed with a wide pad formed by the joining of the center toes at the base, and are mounted with large, strong claws. The whole apparatus is designed for heavy collision duty, not for walking and hardly for hopping. They hop forward on a flat surface, but hitch sideways along a limb. When holding a bird, you find that it has a very strong grip, enough to break the skin of a bare arm. And when nesting, these feet can cling to the heavy bark of a vertical surface. In motion (flying) the center of gravity appears to be far forward because of the heavy head and long neck. They fly with the neck extended so there is probably some lift in the shape of the bill. This is counter-balanced by a long, broad tail and heavy duty landing gear. When it comes to a sudden stop, like landing on a limb, the landing gear makes a massive grab, but the weight and size of the head carries it forward to be counteracted by a violent uplift of the tail or a thump on the head or beak against the limb or any nearby object. The Asian species are strictly arboreal which probably avoids some of these bumps, but if they try to land on the soil or on a level surface, a blow on the beak is nearly inevitable.

The theropod dinosaurs that started all of this had long tails with many vertebrae. In the process of becoming birds, the bones of this tail were shortened to a compressed clump and the tail was replaced by feathers which took over the job of balancing the animal without being so heavy. Some mobility was retained so that the tail could be wagged and the feathers spread. In the Hornbills the basal joint retained its full mobility for the tail can be lifted vertically and folded over the back. It is an adaptation which allows the long feathers to grow in the narrow confines of the tree hole nest, but this also allows the bird to use its tail in counteracting the forward motion of the head when stopping.

Nest building seems to be a very primitive effort, having arisen very early in the development of vertebrates. Fish, lizards, and crocodiles, and probably many species of dinosaurs did also. But the use of a hole in which to put the eggs for protection may be even more primitive than nest building. Certainly if the dinosaur-birds of the Cretaceous era did crawl and hop about trees, gliding from one to another, the return to the ground to lay eggs would have been more hazardous than placing them in a hole in a tree. Tropical trees were as large then as now and there were fungi and insects, so there would be rotting holes from torn limbs and lightning damage. But it takes a very big hole for such a large bird, necessitating large trees. Removing the large trees from a forest effectively removes the hornbills.

Having found a suitable cavity a pair begins altering it. Their strong hard

bills permit them to enlarge it until it will house the female and her two or more growing offsprings. By now it is so big that a marauding monkey could reach in an exploring arm, a snake creep in, or even civets, leopards, monitor lizards, or martens could predate them, necessitating a door. When her time comes to lay, the hen enters the cavity and clings to the walls with her strong feet as she begins helping her mate close the gate. Using wood fragments from inside and mud which is available at the bases of aerophytes or ferns mixed with saliva and feces, they pack the entrance until only a slit remains. The compost hardens to adobe-like hardness and with such an opening any invader can be met by a rapier thrust of the mother's beak. Captive hornbills will drop to the floor of a cage to pick up and swallow bits of mud, but I have rarely seen a wild one on the forest floor. Once I saw a Giant Hornbill pick up a crushed lizard from a roadway in the forest and Lord Medway had a pair of fighting Rhinoceros Hornbills fall to the floor near him, one of which he captured bare-handed, and Pilai and I watched a Giant fly to the floor to pick up a Green Tree Snake that he had dropped, but these have been our only observations. High in the canopy there is sufficient windblown soil captured about the bases of aerophytes to supply the needs of many species for both nest building and digestion. As very few species have been studied intensively, very little is known about what goes on inside of the nest. Pilai Poonswad, a young biologist who was on my staff, turned to a comprehensive study of hornbills after we left Thailand and she has accumulated more accurate records of nesting habits of Giant, Wreathed, and Brown Hornbills than any ornithologist before her. Recent high tech photographs using quartz rods in the cavity have explored the activity within the nests of these species.

Feather molt in most birds is a regular thing progressing from feather to feather, but in the nest cavity the female rapidly loses all of her primaries, secondaries, and tail feathers. Molt in the male follows a normal progression, a feather at a time over a period of several weeks. In the nest she chops her feathers into fragments which she uses to floor the compartment, or she may discard them through the door. The one to four eggs that she lays, depending upon the species, require up to a month to hatch and the babies may not fledge for two months, requiring that the mother practice some house cleaning. In many species of birds nest sanitation is facilitated by the young depositing feces over the side. With hornbills, the muscles of the cloaca have become so strong that she and her offspring can fire feces through the entrance hole like a tobacco chewer aiming at a spittoon. They clamber up the walls to eject. Needless to say, this suggests a need for yard cleaning about the base of the home tree. Heavy rains and insects sweep away most of the detritus. Even so, debris made up of dropped fruit or seeds as well as undigested food does accumulate about a nest tree which makes it vulnerable to nest robbing humans. As the hen incubates her eggs she molts her body feathers and begins regrowing her primaries. Now is when the tail joint comes in handy, for the new feathers grow vertically. The youngsters are naked, blind, and helpless at hatching, but become active enough to climb the walls even before their feathers grow, and like their mother's, their tails grow vertically. Large nesting cavities are at a premium in these forests and a favorable one will be used by

the same pair year after year, or they may have to compete with other species for it.

Hornbills are omnivorous, feeding on fruits of many kinds and almost any prey, vertebrate or invertebrate, that they can catch. They search out every nest or hiding place, can catch reptiles and small mammals with ease and I have seen my captive Great snap sparrows and pigeons from the air if they fly too close. Fig and other fruit bearing trees come into fruit alternately in the forest and along with an abundant supply of insects and small life there is food enough to supply the needs of a 2000 gram male, his 1800 gram mate, and two or more ravenous youngsters.

Hornbills are a sociable lot and this has important bearing upon the survival of families incarcerated in their tree houses. Not all of the pairs of one species nest simultaneously, and members of a flock may gather around to watch the fun and to help father feed his family. The larger species do not breed until possibly the third or fourth year, in the Ground Hornbill even for five or ten years (Kemp), and any given flock may be made up of the parents and of young surviving from previous years. They may help feed the parent and young in a nest, bringing food which they give to the father who then feeds his family. In some species when the young have become large, the mother breaks out and is helped in repairing the door. Then she, the male, and helpers bring food. This is an important safety-valve in the survival of some species, for the female, as well as the young, is helpless while growing new feathers and should an accident happen to the father, the helpers or neighbors will support them. When the young leave the nest it may take them a day or two to get used to having their tails behind them and they will perch on limbs with their tails straight up. And speaking of tails, the male has by now worn his to a frazzle as he uses it to help support him as he clings to the side of the nest tree passing food in to the family.

We see "play" in mammals that is often described as practice in the things that will be needed proficiently in later life. Play also involves actions for amusement which may appear irrelevant to the observer. We rarely see play in birds because they mature rapidly and their period of training is short. In most smaller species each year is a generation; the bird that hatches this year breeds next, so they do not seem to play. This is a moot question since close observation of young may reveal actions which could be ascribed to or considered as play. Hornbills, on the other hand, take a long time to grow up, from one to many years, and they play. I have had young of ten species in captivity, free in large cages where their activities were not greatly restricted, and they do many things that can be construed as play. One Great Hornbill would put her bill in a shoe and push it around like a child pushing a toy car.

A young Black Hornbill took great delight in teasing a dog. The bird had been raised by a family with three dogs. It was free, but returned each evening for a snack of meat put up in a small tree. The three dogs responded differently to this bird. One was afraid of it and would hide in the house when it was present, another was aggressive toward it and had to be restrained, and the third had set up a situation of commensalism. The bird with a morsel of food would fly to the back of a lawn chair and the dog stood beside it, head

up waiting to be fed. The bird would drop the meat into the dog's mouth, or swallow it itself. Returning with another tidbit it might repeat this or it would carefully insert the meat into the dog's throat and then snatch it away before the dog could swallow. The resulting frustration of the dog appeared to be amusing to the hornbill as well as to the human spectators.

Such spectacular birds could not but appeal to the imaginations of primitive people in these forests and much mythology has been woven around them. In Borneo the Rhinoceros Hornbill was a deity of war and it was replicated in beautiful wood carvings that were burned or were floated down rivers during ceremonies of success and favor before warriors embarked upon a head-hunting expedition. This species was important in other ceremonies as well.

Most amusing of all was the folklore woven around the Helmeted Hornbill. This species has a long drawn-out call beginning with widely spaced deep toned honks which are gradually given more closely until the performance ends in a wild crescendo. Even aborigines have mother-in-law problems! In this story a young husband is so put upon by his mother-in-law that he is driven to violence. Homes of the forest people are supported high above the soil on poles, which keep them from inundation during heavy rains or floods. The song of the Helmeted Hornbill represents this angry young man as he slowly begins chopping away the poles supporting the house of his mother-in-law. Chopping more rapidly as his anger mounts he laughs hysterically as the house crashes down. The bird's call replicates this.

How do hornbills spend their days in the forest? Each species has its own programs and temperament. The Pieds are noisy and active and dash from tree to tree with exuberant raucous calls. The larger species may be much more sedate. In my first encounter with Blacks I thought that I was being approached

[1967: The composition of mixed species flocks in lowland and sub-montane forests of Malaya. Wilson Bul. 79; Fauna of the Dark Cave, Batu Caves, Kuala Lumpur, Malaysia. Pacific Insects 9, (H.E. McClure, Lim Boo-Liat, and Sarah E. Winn). 1968: Nesting birds in a coconut-mangrove habitat in Selangor. Malayan Nature Jour. 22, (H.E. McClure and Husain bin Haji Osman). 1969: Thirty years of banding birds. Western Bird-Bander 44. 1970: Three notes on Thai birds. Natural History Bul Siam Soc. 23; In contemplation of the global wildlife conservationist. Proc. IUCN Eleventh Tech. Meeting, New Delhi 1969. 1971: The sale of birds at the Bangkok "Sunday Market", Thailand. Natural Hist. Bul Siam Soc 24., (H.E. McClure and Somtob Chaiyapun). Annual reports, Migratory Animal Pathological Survey (as follows): 1964: Mimeographed, July 1965. 1965: Applied Scientific Research Corp. of Thailand Bangkok, July 1966. 1966: Applied Scientific Research Corp. of Thailand Bangkok, July 1967. 1967: Applied Scientific Research Corp. of Thailand Bangkok, Sept. 1968.]

by a herd of wild boar and I was apprehensive. Their talking and calling sounded much like those of pigs. The Wreathed roosts at night in communal roosts and at dawn they awaken and give faint squalls as they preen for the day. Then in wavering lines the separate flocks begin their roaring flight to known feeding grounds. At sundown they return to the roost, again in columns and groups, each group with a dominant female in the lead. The Great and Rhinoceros roosts singly or by families in places that they use year after year and they augment the morning chorus with roars and barks. After gorging themselves on figs, or fruit of the day, all species rest and preen nearby and then return to their feeding.

Robin Blue sang from his perch on a utility pole above his beloved garden. In exuberance he bounced on stiff beating wings to the cornice of the four story building across the street and continued to herald the breaking of a new day. In the five o'clock dawn the cacophonous city was also awakening. The shrill laugh of a happy child, a neighbor hammering to reinforce a collapsing wooden porch step, the sputtering shock of a three-wheeled taxi (trishaw) roaring down the side street drowned out Blue's melody as trucks and buses lumbered up Sukumvit Road and the street lights clicked off. A sleepy prostitute wandered homeward up a lane and street vendors were already opening their shops. Bangkok's millions faced another day!

The bird stopped a moment to preen watched a late returning large eared bat hurrying west, and then looked over his shoulder back at a Firestone sign among the girders of which was nestled his nest, on a tall building seven stories above the noisy street. He dropped to the garden lawn to search for an unwary worm that might have stayed up too late and been overtaken by dawn. Instead he found a stunned garden cricket from last night's dance around the city lights. This he dispatched, quickly dismembered, and carried up to the three hungry youngsters in the sign.

It was nine years since he, as a young male establishing his position in the community, had looked up from foraging in the garden on a day later in the summer and had watched the heavy wooden garden gate open to let in a black car. He was used to cars coming and going but this one was to be part of his scene for nearly a decade.

The MAPS Program had been under way for nearly three years and we felt strongly that Bangkok was a more central location for it than Tokyo, so in July, 1966 we flew with Buttons (the scops owl) and Taffy (the dog) to Bangkok to establish there at ASRCT, The Applied Scientific Research Corporation of Thailand.

It hadn't been much of a garden then (in 1966) any more than now (1975). The house was big and looked comfortable, but the garden could hardly be twenty meters square. True it was a fairly extensive garden considering that it was in the heart of Bangkok and maybe 50 meters north of Sukumvit Road with its 24 hours of roaring traffic. The address was 4 soi 15 meaning that it was almost at the corner of the block on Sukumvit and on a street only about

15 blocks from where they began numbering streets on Bangkok. The Erawan Hotel was just down Sukumvit to the east, later the Central Department Store would be built in that vicinity and during the years an almost continuous shopping district had developed along the way. Around the corner from the garden was a market with the dubious name of the Underground. Across the street the Manhattan Hotel was under construction at the time. Behind it another building eventually went up and burned, and on the corner across the street a four storied building for shops and apartments was built. But now, in 1966 there was just a tangle of smaller structures.

There were other gardens to the north of the house and the landlord lived in a beautiful old home to the west. In fact he had built this little cluster of four homes during the past fifty years. Homes that, when they were constructed, were in the country outside of Bangkok amid rice fields and serviced by a canal or Klong on the north and by a dirt road to Sukumvit on the south. I had visited Bangkok in 1954 and Sumkumvit had been gravel, parts of which were being paved. Now 12 years later the area was completely built up, but the klong was still there and in use. Between us and the klong were two blocks of homes and the grounds of two schools, the American School and St. Phillips.

We looked at the house and grounds again. Yes, the house was nice and we would take it, and I hoped that at least some wildlife would show up in the garden. It was nine year before we left this place that had become so much home to us and home to a surprising host of little creatures. A hibiscus hedge which grew to three meters height, bordered the garden to the south and east. Interspersed among it were mango trees, a fruiting *Muntingia* tree, clumps of *Chrysalido-carpus* palms with lesser plants beneath them. A large sugar palm (*Livingstonia*) towered 10 meters above the garden at the west end of the drive way and behind this was a dense clump of bananas and more hibiscus. It was in this clump that I built a large cage to house hornbills and other birds.

The front porch was uncovered but was shaded by *Bougainvillea* and an arbor. Between it and the concrete driveway was a narrow border of *Canna* that bore crimson flowers and beyond the driveway was the lawn and border plantings. To the back of the house at the northwest corner on the landlords property was a large tamarind tree which shaded the pool there and also shaded our servants quarters and working area. A narrow lawn to the east between the house and the street supported trees and palms of several species. Later a strangling fig with edible fruit became established by the driveway and completely dominated the entrance into the garden.

Soon after we took possession of 4 soi 15 we began enjoying the evenings with tea or a drink served on the front porch as we watched the evening activities in the garden illuminated by the setting sun and crimson clouds. It was then that I made Blue's acquaintance. He wasn't Robin Blue at that time for it was several months before I set up nets to capture and band him with a number on the right and blue on the left. This action of netting in the garden upset its occupants enough that I did not do it often. Just a few times so as to get markers on key players.

Blue was a black and white thrush, known as the Magpie Robin

(*Copsychus saularis*), a common urban and suburban species found throughout much of Southeast Asia. It is an excellent singer and fills the niche of the Northern Mockingbird in western and southern United States, or possibly that of the American Robin in lawns and gardens further north. He and his wives and youngsters were the most conspicuous and continuous occupants of the garden.

A juvenile female was netted on 13 Sept 1968, and ringed with 030-28005, but she was not seen or recaptured again.

A female was caught 17 March 1969, and banded with 040-28013. She was not seen in the company of Robin Blue and may have been from a neighboring pair. She was recaptured in full moult on 20 July 1969, and on 10 May 1970 she was again in my net, this time with a brood patch indicating that she was incubating at some undiscovered nest.

Robin Blue strutted in the garden and nested in the Firestone sign on the 7-storied building each year following our introduction in the fall of 1966. He was netted on 5 April 1969, ringed 040-28014 on the right leg, and a blue plastic band was placed on his left. He was recaptured 10 May 1969 and 14 Feb. 1972 still with his blue ring. He was last seen in the garden 4 July 1975 the day that we left Bangkok, now more than nine years old and probably ten.

A juvenile caught on 10 May 1969 was provided with ring 040-28015 on the right and a yellow plastic ring on the left and its nestmate was banded 040-28016 on the right and pink on the left on the same day. These may have been Blue's offspring but they were not seen again.

Blue's sibling offsprings, 040-28035 and 040-67403 with yellow left and white left, respectively, were ringed on 10 May 70, and these also failed to return to the garden.

A strange male appeared in the net on 25 May 1972 and was banded 040-67443. He may have been Blue's competitor for the garden. A lovely female was ringed 031-24562 on the left leg on 5 March 1974, and she proved to be Blue's last mate before we left in July 75. We could not know how long she had been with him.

Blue led an eventful life. Each winter he sparred daily with "Sandy", a Brown Shrike (*Lanius cristatus*) that wintered in our garden year after year. During the long breeding season he and his current wife made innumerable trips to the Firestone sign feeding brood after brood. His territory was nearly limited to that of the garden, yet it produced enough small life to support him and his families and those of other insectivores and fruit eaters as well. The pair made use of the Firestone sign each year until a tragedy of 17 October 1972.

On that evening there was a meeting of the Natural History section of the Siam Society at the Society's headquarters and library two blocks from us, which I was chairing. Just as we left for the meeting we heard fire-wagons approaching. As I called the meeting to order someone rushed in to say that the Firestone building was on fire. I turned the meeting over to the vice-president and ran home. The restaurant that was on the top floor, the seventh, was aflame from a fire that had broken out in the kitchen. Customers and office workers still in the building escaped, with only a leg broken in a rush

down the stairs. Soon the top three floors were a mass of flames. Firemen extended their leaky hoses to nearby plugs, but there wasn't enough water or pressure to reach to that height. The adjacent Manhattan Hotel evacuated its guests and refused the firemen the use of the swimming pool saying that they would need it to save the hotel. The pool on the property of our landlord's sister, next to our garden, was behind a high corrugated iron fence. We let the firemen remove parts of the fence, drop in their hoses, attach an auxiliary pump and, while police guarded our open gate to protect the garden and house from pilferers, the firemen mounted to the roof of the Manhattan and with this additional water saved the day. They brought the roaring inferno to a halt. Alas, the home of Blue and R13 was a mass of melted, twisted girders above the blackened building. But they were no longer in occupancy this late in the fall. I returned to continue chairing the meeting.

Soon after the fire, workmen began the repairing and reconstruction of the B-P building. Eventually the Firestone sign was replaced and lighted again. A row of one story stores on the east side of soi 15 between the Manhattan Hotel and Sukumvit was replaced by a three story buildings, shops at the street level and apartments, as yet unoccupied, in the upper levels.

But the loss of Firestone completely altered Blue's life style. Another male contested the use of his garden and he was driven from it. He and the contender continued to fight with the result that neither succeeded in bringing off young in 1973. He established a smaller territory in an adjoining garden and by 1975 had regained control and, shifting his singing perches from those on the lower buildings, he now sang from a cornice high above.

Earlier studies made at Rantau Panjang, near Kuala Lumpur, 600 miles south had revealed that three eggs was the normal clutch for this species. Seldom did Blue bring three fledglings to the garden. I suspect that three may have been fledged or reared to fledgling age, but either met early deaths or the family rarely gathered in the garden all at one time.

Three broods appeared in March, April, and June of 1967, and three were again seen in March, May, and June of 1968. Three broods occurred in 1969 in the same months and four in 1970, March, April, May, and June. In 1972 and 73, Blue was displaced by an invader which may have been one of his own sons and if he nested it was not in the Firestone sign or where we could see him. 1974 and 1975 saw him back at the sign with two broods in March and June and April and June respectively. These 22 nesting attempts produced a total of 36 young that were seen in the garden, out of a possible 66 eggs laid.

We met Sandy in September 1966 when he appeared in the garden as a young bird of the year, still with his streaked breast. In spite of his daily confrontation with Robin Blue and others of the inhabitants of the garden, he remained faithful to it as a winter resident.

Sandy was probably the most cosmopolitan denizen of our garden. As a species, Brown Shrikes (*Lanius cristatus*) range across Eurasia from France and England to Japan. It breeds in all this vast range north of the Himalayas and

the Mediterranean to the tundra and as migrants they leave their northern homes and move into Africa to Cape Horn and in Southeast Asia it penetrates the mainlands and islands to Sumatra and Java.

This fierce little bird, with a hooked bill for tearing meat, has walking feet not made for holding food and is mainly a predator of insects but it will take small birds and mammals.

Returning to its summer home in the north, the male arrives first, sets up a territory, which he defends vigorously. When a mate has accepted him he spends three of four days building a loose knit nest of wiry fibers among low bushes or in shrubbery. The female incubates the four or five mottled eggs which hatch in 14 days. Prey is brought to these ravenous youngsters by both parents. There appears to be an urgency to leave the nest, probably because local prey become fewer as the young age and demand more to sustain them. They fledge at 12 to 15 days not even fully feathered, their primary wing and tail feathers hardly long enough to support them; and follow the parents for nearly a month, fed, and cared for by them until their growth is complete. When the family breaks up the youngsters still have a barred breast which they will retain all during their sojourn in the southlands until a complete moult of the following spring brings the clear breasted adult plumage.

In late summer both adults and juveniles depart for the south moving along flyways that take them to their respective winter quarters. Those of eastern Asia, Japan, Sakhalin, the Amur River valley of eastern Siberia, and north China move in vast numbers down eastern China. One branch of this stream crosses the China Sea to Taiwan where hundreds of thousands are caught for human food. Those that escape this carnage fly on into the Philippines where they are subject to more harassment by hungry farmers.

The flight that moves on across the Himalayas into Southeast Asia, including Thailand avoid this loss. Although the people of Southeast Asia, including the Thais, harvest millions of birds, mainly finches for food, they harvest but few shrikes since the shrikes are non-gregarious in their winter lands and are much more difficult to capture. Each bird establishes a winter territory, probably not as large as that demanded by its family when in the north. Here it hunts and thrives until some stimulus in March or April beckons it back north.

We had no way of knowing the site of Sandy's home or breeding territory, but suspected that it was somewhere along the Amur River in eastern Siberia. He was very faithful in his tenure of the garden as the following shows:

| Arrival | Departure | Days in Bangkok |
|-------------------|---------------|-----------------|
| 1966 19 September | April ?, 1967 | 225 |
| 1967 12 September | 27 April 1968 | 237 |
| 1968 16 September | 17 April 1969 | 223 |
| 1969 13 September | 13 April 1970 | 222 |

1970 27 September

30 April 1971

225

1971 24 September

5 Dec. 1971 last seen

72

As the days of December 1971 passed my concern for Sandy mounted. His absence from the garden had become serious since he had not been seen since the fifth, which may have been his fateful day. We bid farewell to a fascinating little character and friend. Having arrived as a juvenile bird he had been a resident of the garden for five winters and had survived more than 35,000 migratory miles from his breeding place somewhere in north China. If he had hatched in June of 1966 he would have been 65 months old and would have spent 1,204 days with us, nearly 60% of his life. We never found his body and no shrike took his place during the remaining two years that we were in Bangkok.

So many species made use of this small garden that year after year voluminous notes concerning them accumulated, later to be assembled in a rather disjointed, long-winded treatise which has never been condensed and published. Beside the Magpie Robin and the Brown Shrike there was another conspicuous and abundant resident, Blanford's Bulbul (*Pycnonotus blanfordi*).

Bulbuls are old world species and there is no counterpart for Blanford's Bulbul in the gardens and towns of North America. They are gregarious birds of shrubs and low trees where they search for insects and fruit. About the size of a Mockingbird without its long tail, Blanford's is a dull brownish tinged with yellow or green on the upper surfaces shading to a dull cream beneath with a lighter belly and yellowish vent. South of Bangkok it mingles with the Yellow-vented bulbul (*Pycnonotus goiavier*) which supplants it in Malaya and south. Inconspicuous streaking of the feathers covering the ears distinguishes it from other similarly colored bulbuls.

The nest is usually built low in dense vegetation, less than 15 feet above the ground, a loosely woven cup of plant fibers supplied with two pinkish eggs with brown or purplish dots. Incubation is 12 days and nestling life very short, twelve days or less. Because of heavy predation in the forest edges where this species originated, this early fledging is an important survival factor.

Blanford must have been an ardent collector in the mid 1800's in India, Burma, and the Himalayas. In my meager library I do not find any references to publications by him, but he was honored by several ornithologists of the time. During this period of British occupation of India numerous biologists were collecting and were describing animals and plants brought to them by other collectors or which they themselves had discovered. Often they were describing species having already been named by others and this caused considerable confusion in the literature.

Allan Hume (1829-1912), a contemporary of Edward Blyth, named a snow-finch found in Sikkim and Tibet *Montifringilla blanfordi*. He also created

a genus *Blanfordius* for a hill-warbler of north India, which he named *Blanfordius striatulus*. This genus did not stand and is not used today. Edward Blyth (1810-1873), an English ornithologist, was curator of birds of the Museum of the Asiatic Society of Bengal at Calcutta from 1841 to 1861 and during these years he was unable to travel much but accepted or bought specimens from other collectors. He named a sub-species of the Yellow-fronted Pied Woodpecker of northern India and the Himalayas *Picus blanfordi* in 1863. That same year he honored Blanford again by naming a quail of Northern India *Turnix blanfordii*. Arthur Hay Walden (1824-1878) named one of the wren-warblers *Drymoica blanfordi* at about the same time. As late as 1921 Stuart Baker in his 8 volume work on the Fauna of British India referred to the Yellow-breasted Sungird (*Nectarinia jugularis*) by the now obsolete name *Cyrtostomus pectoralis blanfordi*.

Frederick Herman Otto Finsch (1839-1917) using bulbul specimens collected at Bangkok described them as *Criniger conradi* honoring a friend. But Thomas Jerdon (1811-1872) had preceded him in 1862 with a description of birds from northern Thailand and the streaked-eared bulbul became *Pycnonotus blanfordi*.

There was a wall at the south end of the garden along which was a dense thicket of hibiscus, three mango trees rose above the shrubs, and across the fence at the border of the next garden was a small tree. This was a Muntingia tree, *Muntingia calabura*, a native of tropical America brought to Southeast Asia via the Philippines. It is commonly called the False Cherry Tree and is widely planted as a shade or garden ornamental. Its sweet red berries are produced all year, from a dainty, five petalate, white flower. Wherever planted, native fruit eating birds soon discover it, including those in our neighborhood. Where the climate is warm enough for the tree to survive, it is an excellent one to plant in gardens to feed and attract the birds. As the small, green berries ripened to a russet red they were eagerly sought after by the Bulbuls. Ten or twelve birds fed here daily. They gathered at sunup for breakfast and again at sundown for supper, and fed intermittently during the day as well.

Since so many birds were feeding on Muntingia berries and insects as well as at a feeding station, there was no way of knowing how many pairs were actually involved in the drama of nesting and fledgling in the garden and its surroundings. As there were only two eggs in a clutch, the number of fledglings seen was usually that.

Broods from six nests were brought to the garden in March, April, May, June, and July of 1967, totalling 8 known young. The figure was six broods in 1968 with nine young tallied between January and July. 1969 was a bad year, only one brood, that of R11 and they died. In 1970 there were two broods, two young in March and 1 in June. The years 1971 and 1972 were unsuccessful for the Bulbus as well as the robins. The favored Muntingia tree had been cut down and newly planted ones were not yet bearing fruit thereby attracting no parents with their young to the garden. I do not know about their success in nearby gardens. The Muntingia trees bore fruit in 1973 and the feeder was patronized as well by four broods totalling six young, February, March, May, and July. There were successes again in 1974 with three broods including five

young appearing in March, April, and May. Finally, before we left the city in July 1975, five broods, including nine birds, had been brought to the garden.

This high rate of success in nesting is contrary to that of studies of other species elsewhere. A study that I did of the very similar Yellow-vented Bulbul in Malaya showed many fewer nests surviving to the fledging of the young. In the garden situation I could not know how many nesting attempts had failed. I knew only of those young brought to the garden for training.

Because they flew low to the Cherry tree, these birds were easy to net. Their band records were: 27 January 1968 banded a juvenile 040-28011 on the right leg. From March to June 1968 011 helped her parents rear other broods. March 1969 she began rearing her own young. 9 March 1969 her right leg was broken above the hallus probably by Big Baby. Until I put a roof on the cage, Big Baby, our Giant Hornbill, would reach through the coarse mesh and break off the legs of smaller birds walking there. Her babies died because she was too sick and weak. She was recaptured 12 April 1969 and her stub had healed. February 1970 R11 had a mate but she still had difficulty standing on her one good leg, however, during March, she raised a brood of young. She was last seen in the garden on 20 May 1972 having lived with us for 52 months, 37 of these with only one leg. Other banded Bulbuls included:

- 1 April 68, juvenile, 040-28012 on right;
- 28 Sept. 69, full grown bird, 040-28018 on left, red on right;
- 28 Sept. 69, full grown bird, possibly female, 040-28019 right, Blue left;
- 28 Sept. 69, full grown, 040-28020 right and Yellow left;
- 28 Sept. 69, full grown, 040-28021 on left, heavily infested with feather mites;
- 5 Oct. 69, full grown, 040-28022 right;
- 23 March 70, nestlings, 040-67401 left, and 040-67402 right, these two birds were siblings, young of R11;
- 10 Jan. 71, female, 040-67404 right, Blue left,
- 10 Jan. 71, male, 040-67405 left, Pink right,
- 10 Jan. 71, female, 040-67406 right, White left,
- 10 Jan. 71, female, 040-67407 left, Blue right,
- 10 Jan. 71, male, 040-67408 right, Yellow left,
- 10 Jan. 71, male, 040-67409 left, Red on right
- 10 Jan. 71, male, 040-67410 right,
- 10 Jan. 71, female, 040-67411 right, this was an old bird,
- 10 Jan. 71, male, 040-67412 right,
- 10 Jan. 71, female, 040-67413 right, this bird had a hippoboscid fly on it,
- 10 Jan. 71, male, 040-67414 right. This appeared to be an old bird,
- 10 Jan. 71, female, 040-67415 right,
- 10 Jan. 71, male, 040-67416 right. Appeared to be an old bird,
- 10 Jan. 71, male, 040-67417 right;
- 8 July 73, fledgling, 031-24561 right;
- 1 June 75, fledgling, 031-24563 right.

The lifestyle of these birds was very involved. At that time other researchers were beginning to discover that the presence of helpers in a family

group was much more widespread among species than had heretofore been suspected. So it was with these bulbuls. The youngsters fledged and then followed their parents for several days, being fed, and being trained where to get food. During this training period juveniles from previous broods would help. As a safety factor, parents and young did not roost together. A small twig near the tip of some branch in a favored tree would be selected for roosting and the young coaxed there. After the two fledglings had gone to sleep, or at least put their heads under their wings, the parents would fly to some other part of the garden to roost. Such favored places for young were used repeatedly for months and often young of a previous nesting would stay with them. The trials and tribulations of fledgling care and training related to these roosting or sleeping places were the subjects of many interesting observations.

What was learned from these two studies involving Robin Blue and the Bulbuls: Most obvious has been the ability of the adult Blanford's Bulbul to communicate with, train, and worry about its young. We have seen pairs remember a satisfactory sleeping place and use it brood after brood. We also learned that a juvenile helper remembered a sleeping place even after it becomes mature and raises its own young. In addition, it became evident that the development of helpers from previous broods made it possible to bring more broods off the nests than would be possible if juvenile training had been left to the parents alone. With the Robins the male took over this task while its mate returned to nesting. Further, it is now evident that what has been learned by a bird is transmissible to at least one generation following, and as many as two. Such transmission of information appeared to be by direct communication rather than by hereditary patterns. Such knowledge can be useful to second and third generations only if these new generations return to natal territories. With the robin there was no effort to inform the juveniles of territory idiosyncracies since they dispersed from the vicinity of natal development. What was remarkable about the robin was the ability to remember and continue to make use year after year of the same nest site even though it was destroyed and unavailable for a complete breeding cycle. Such site memory is known among migratory species as related to territories at either end of their migratory routes, but that such memory pattern exists in sedentary tropical species had not been demonstrated. Recent research with hornbills has shown annual usage of preferred nest cavities. And tropical woodpeckers and barbets may function this way as well. In the present study both the bulbuls and the robins had their habit patterns disrupted by outside influences, and both species resumed the old patterns in later years.

Each evening we watched the progress of the Large-eared Bats as flocks streamed from the city to feeding territories above the rice fields, and in the fall, winter, and spring, we watched the flights of House Swallows, winter residents from the far north; the swallows arriving each evening to roost in the city and meeting the bats that were leaving. No study of aeroplankton such as I did in Kentucky and Illinois has ever been attempted, but the mass of life in the air above field and forest in the tropics must be stupendous to endure the continuous feeding of hordes of insectivorous aerial feeders.

And there were others that used the garden; starlings of five species,

House Sparrows, toads, geckos, Fantail Flycatchers, tailorbirds, and on and on, but they should be left to another volume.

Tiger stories can be scary and some are pretty gruesome! Even though working for nearly fourteen years in forests of Southeast Asia that were inhabited by tigers, I never actually encountered one. Khao Yai National Park in Thailand has a fairly high tiger population because of the abundance of three species of deer, wild pigs, wild cattle, and other game. Often my friends would drive into the park and see a tiger. Probably there was more than one which, resting at the edge of the road, watched the occasional car. I was not that fortunate. As I wandered about the forest both in Malaya and Thailand, I saw the tracks of tigers on the path before me and on the trail behind me and I am sure that both tigers and leopards stood quietly in some nook and watched me pass.

Man is dangerous game and usually he is respected rather than attacked. One young American studying elephants at Khao Yai encountered tigers three times. Once he saw one on the trail ahead of him, the second time one was approaching and he stepped off the path to let the tiger pass, and the third time he heard the tiger coming through the brush, but as it burst onto the path near where the young man stood, it gave a hoarse grunt and dashed off.

Atsuo Tsuji, the photographer working with Pilai, also encountered tigers three times. Once, when he and Pilai were in a fragile bamboo blind watching Hornbills, a tiger walked past. On another occasion, one walked beneath the park lookout tower while he was there. He was descending a path at the border of a small lake when he met head on a tiger ascending the same path. Preoccupied, they nearly ran into each other and halted face to face. Atsuo was immobile in surprise and the tiger, equally distressed, turned back down the trail, so that Atsuo, galvanized into action, recorded with camera, only the tail as the animal plunged into nearby brush.

Each year at Khao Yai, the Campfire Girls and Boy Scouts had outings at a very fine camp provided for them near a large stream. Part of the fun at these campouts for either the Campfire Girls when they were there or the Boy Scouts, was to stimulate the imagination during campfire with stories about tigers and then to set up tiger guards for the night. Youngsters were assigned guard duty about the camp through the night. What a thrill, in the great dark forest with firelight shimmering on the canopy of leaves above and to the sides, with all of the night noises, the squeaks, booms, grunts, and rustling that this vital forest emits.

Nancy Green was a Campfire Girl leader and accompanied a large group of young girls during one of these exciting outings. The tiger routine went on as usual with girls shivering in their bed rolls more from tiger stories than the chill night air. Two little girls had the 0200-0300 shift and stood their watch. The next morning when all compared notes of the nights events they mentioned the big cat which they saw. Sure enough a tiger had walked through the camp leaving his big puck marks in the soft clay.

This or other tigers were seen several times along the river and about the Park headquarters which eventually led to tragedy. The headquarters was a little village of rooms and apartments clustered around the Park offices. These buildings were on stilts as is customary for houses in the tropics and goats, chickens, and domestic rabbits lived beneath. These domestic animals continued to disappear with tiger pucker marks pointing to the culprit. The workmen rigged a trap of an old iron bear cage with a drop door and baited it with a rabbit. That night the tiger was caught. It was either a young and inexperienced animal or an old and hungry one. I was horrified by this action for now they really had a "tiger-by-the-tail".

The animal should have been killed immediately or released immediately, but there were several days delay while alternatives were under discussion. Should they release it, or should they build a cage and place it on exhibit, or should they kill it. While this was going on, the animal could have been developing a fear of man, a hatred for him, or a complete lack of respect. Decision made, they loaded the cat onto a truck and hauled it a few miles away to be released.

Months later, one evening the ten year old daughter of one of the park rangers had visited a friend in a nearby apartment in order to borrow a pencil for her lessons. As she walked up the steps to her home, she was struck from the dark by a tiger which seized her by the waist and dragged her away. Alerted by her screams, the rangers rescued her, but the next day she died of her injuries in a nearby hospital.

Traps were set and baited and rangers kept watch. Hearing a noise in the dark several evenings later, a ranger looked out from a window and was seized by the head by a tiger crouched on the roof. He was dead when found! A tiger hunt resulted, and one was shot. Two people had died, a tiger was killed, was it the same individual so unwisely held in a stifling trap for days?

I often tell my shuddering listeners, the animal of the wild land in any country for which you should have the greatest fear is man. Alone and without a weapon, I have walked the deserts of the west, the tundra, the tropical rain forests, the woodlands of Hokkaido, the ironlands of Australia, and I have never encountered a greater danger than myself, for I have gotten lost. Mankind is your opponent: Nancy Green was held up by a bandit in Khao Yai. One of our bird banders was murdered as he checked his bird nets in Mindanao. A Danish friend was murdered in his little hut by hill tribesmen in northern Thailand. A young friend and his beautiful wife, with whom I had square danced in Tokyo, were ambushed and killed by bandits in Iran. Yes! I feel much safer in a tiger and elephant inhabited jungle.

East of Port Moresby a few miles into New Guinea was all we had time for. My time was limited and McDonald, a local museum director, was trying to show me as many birds as possible in a day's drive from the capital. He knew of an arbor of the Fawn-breasted Bowerbird and we visited it. Obviously the bird was using it, having decorated it with blue flowers and bits of broken

Coca Cola bottles. We found a bit of forest near the road and walking back into it spent a few minutes setting up a mist net. Within moments we returned to find a glorious male Racquet-tailed Kingfisher entangled. This gorgeous blue and multi-colored creature with its long tail drawn into two waving racquets was a dream to behold and to photograph. Hardly had we released him than the female was caught; her feathers and lustrous tail badly worn. We caught him again and then realized that we had put the net before a slight embankment into which they had dug their nesting tunnel. They were feeding nestlings so we quickly removed the net and stole away.

Deeper in the forest there was raucous calling toward which we walked following an old trail. We were in an area of primal forest interspersed with second growth and some unkempt residual orchards possibly citrus and other fruit. Behind an ancient orchard was a giant tree at the forest edge, one that had evaded the ax and in it were performing Red Birds of Paradise. A male in sight was throwing forth his gorgeous red and gold plumes as he swung head downward from his perch to display his finery to critical females. Hardly had I encompassed this wonder than screams from one side led me that way and rounding a bend in the overgrown trail, I faced another great tree, a branch of which was being explored by a Greater Sulphur-crested Cockatoo, source of the calls. Observing my approach he stopped long enough to scream at me and to throw up his unbelievable golden plumes.

Returning through the forest I heard the raucous calls of an approaching hornbill. Yes, there are a few hornbills in New Guinea too, and I broke into a run to intercept it or them as they threaded the forest canopy. As I dashed along the path, the bird drew closer and swooped to come to rest upon a limb directly above me. Not a hornbill, it was the most massive of all Asian parrots, the giant Palm Crested Cockatoo, a glory of black set off by old rose red, a massive head, with great hooked black beak, surmounted with an unruly crown of feathers scattered like the crown of a wind blown coconut palm.

This was too much for McDonald who had traipsed along with me. In amazement he commented, "I want to go bird watching with you again! You seem to have the touch!!"

Rarely am I disappointed when I take a group to see birds, or if I myself am alone in the field; whether it is the sudden appearance of a Sora Rail for a group of Californians, a Paradise Flycatcher in Japan, roaring hornbill wings in Malaya, or the fire sprites of performing Scarlet Minivets in the forests of Thailand. It is partly luck and partly picking the right time and place.

"Don't we shake this thing," noted the mouse to the elephant as they walked across a bridge.

We had been in Malaya nearly five years and I had traced the footsteps of Carveth Well's "Six years in the Malayan Jungle" and had explored a little of the land "where winter never comes". Cam had gone to Singapore to finish high school and enroll in a year of American History. She had done so well at the British School in Kuala Lumpur that the teachers were loathe to see her

go. One teacher asked, "Why must you leave?" to which Cam replied, "I have to have a year of American History to enter college in U.S." Which brought an acid remark from the teacher, "Is there that much?"

She had equal problems when applying to American colleges for entrance papers and forms. American provinciality is second to none and most college registration departments were totally unaware of Americans abroad. They insisted on sending her entrance forms for foreign students, recommending that she speak English fluently and that she bring local costumes or artifacts. Disgustedly she said that she would not apply anywhere until some University sent her a proper form. This proved to be the University of Texas, and there she applied, was accepted, and later graduated in math, biology, and library science.

Jeannette had paid us a visit and we took her by train to Bangkok where we were feted by Mr. Wong whom Chet Southam and I had met six years earlier; and Sam the taxi driver took us on our sight seeing. Ankor Wat in Cambodia was still open to visitors and we spent several days exploring it.

It was now 1962 and both girls had fallen in love and wanted to get married. Being a selfish and not very considerate father, I insisted that they get married in the same summer so that Lucy and I could be there without upsetting our intensive research in the forest. The globe encircling story follows:

Since we had not met the perspective grooms, for a moment of merriment, I sent each an "Application to Marry a McClure". Their studied responses are here!

See Figs. 68-69

APPLICATION TO MARRY A MC CLURE

Full Name: Harry McCauley Miles
 Home Address: Box 865, Alpine, Texas
 Birthdate: April 17, 1942
 Birth Place: San Antonio, Texas
 Father's Name: Elton R. Miles
 Mother's Name: Lillian Miles
 Father's Occupation: Ph.D. University of Texas; Head of English Dept.,
 Sul Ross State College in Alpine;
 Annual Income: \$12,000 (before taxes)
 Graduation Date: BA (BS) May '64 or before
 Additional Education Intentions: MA(MS) MS Chemistry; Ph.D.
 Chemistry
 College Major Subject: Chemistry
 College Minor Subject: Math., Economics, and Philosophy
 Present Income: \$40 a month (teaching assistant)
 How College Curriculum is being Financed: Parents
 Ambition for Future Employment: After completion of education:
 Teaching and research
 Opportunities for Future Employment: After education: Good
 Immediate Future: Hospital Laboratory Technician, Movie Projectionist,
 Professional Musician (Trumpet, Sax, Bass, Drums and
 French Horn) Chem. Lab Instructor
 Tentative Date for Marriage: Depending on your arrival in the U. S.
 Expected income after marriage: \$100 per month from parents, \$60-100 working,
 \$50 Cam in Library. Total: \$200?
 The \$100 per month from parents is on top of the
 tuition and fees. If I am not in school, I do not
 receive anything.
 Hobbies: Speleology and Cam, Mountain Climbing and Cam.
 Height: 5'7"
 Color Hair: Brown
 Weight: 143 Before Christmas Dinner, 149 lbs. after
 Color Eyes: Gray, green, blue, depending upon temper.

P.S. After all of the good things that Cam has told me about you, I am looking forward to meeting you. You both sound like very fine people.

We have all had a lot of fun with this application. I must say that it is worthwhile to go through red tape for such a wonderful girl.

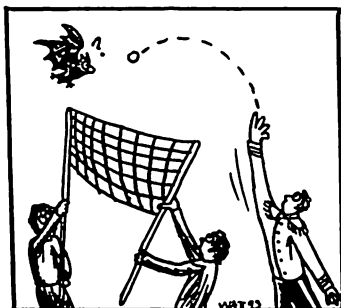
Harry M. Miles

APPLICATION TO MARRY A MC CLURE

Full Name: Sterling Evans Davis
 Home Address: 18 Inman Circle N. E.
 Atlanta, Georgia
 Birthdate: February 10, 1941
 Birthplace: Minneapolis, Minn.
 Father: Lyman E. Davis
 Mother: Ruby E. Larson Davis
 Father's Occupation: Assistant Pastor of Church and Part-time social worker
 (the latter is not a paying job now)
 Graduation Date: BA (BS) BA 1963
 Additional Education Intentions: MA(MS) Yes Ph.D. no
 College Major Subject: Physics
 College Minor Subject: Math
 Present Income: \$1200 (yearly and outside of any parental help)
 How College Curriculum is being financed: Parents (half) and Sterling (half)
 Ambition for Future Employment: Radio engineering and along these lines
 Opportunities for Future Employment: Anywhere!
 Tentative Date For Marriage: September 1, 1962
 Expected Income After Marriage: \$3,600 for at least one year after marriage and then the
 Armed Forces might step in!
 Hobbies:
 1. Radio repair
 2. Stage Lighting
 3. House Wiring
 4. Avid music collector
 Height: 6'0"
 Weight: 160#
 Color Hair: Blondish Brown
 Color Eyes: Hazel

Sterling Davis

30. *Around the World*



We put down in Kuala Lumpur after encircling the world in 82 days, been gone from home for 87 days and having made 43 stops along the way. Where we went, what we saw, and the things we felt are the subject of this our report for 1962. Each year I tell about the things that made that year outstanding, but this year was a stopper. This year we played the record backward. For three months we crept back through the years and our memories and accumulated memories

to go forward with us.

How do you tell the story of thirty thousand miles of travel garnished by visits with hundreds of friends, weddings, conferences, deaths, and countless exciting moments?

This was to be a proper homecoming. We planned and negotiated for months, but until the last weeks before departure we did not know when we would leave nor if we could meet all of the people that we were hoping to. Finally our orders arrived, that we could leave on or about June first, and we had bookings on Pan Am from Singapore for May 27. For a week we were wined and dined by KL friends wishing us a happy trip and an exciting one. On a Saturday afternoon, a wad of plane tickets, passports, visas grasped in our hands, loaded with thirty pounds of overweight in gifts and clothes we boarded Malayan Airways to Singapore. There we were met by the Van Altenas and a driver for the hotel at which the airline had booked us. We gave him the Van Altena address and telephone number and went on for an evening of good company and excellent Chinese food. At ten thirty Sunday morning I lounged from a leisurely breakfast to the phone and called the airport to see if we were properly booked on the 1230 flight to Honolulu. "Where are you?" an excited voice at the other end said, "Your plane is just leaving the runway". Our agent in Kuala Lumpur had failed to read and record some of his recent literature showing that the 1230 flight had been changed to 1045. So we missed it. Frantic phoning and cabling for the rest of the day finally got us on another plane leaving Singapore Monday morning but with no assurance that we wouldn't be stranded along the way.

So mid-morning found us 32,000 feet above the forests of Malaya traveling in minus 32 degree weather at 580 m.p.h. bound for Bangkok. Half an hour there and over the plains of Thailand and hills of Laos out to sea over the coast of Viet Nam. At the fabulous Hong Kong air strip jutting out into the harbor we were told that we had the last two seats on a super jet out of Tokyo for Honolulu. Eleven PM and we were at Haneda the international airport of Japan, slightly furious, for we could have planned Tokyo in our itinerary and seen some of our friends, but all we could do was wait in the lovely transient lounge and write cards to friends only a few minutes away by

the Keihin Line. Midnight and we were six hours from Honolulu, 37,000 feet up in the westerly slip stream wisping our way through the night with 150 other sleepy passengers.

Waikiki gleaming in the morning sun, we met Larry and Sandy Quate a couple of hours before we left Singapore on the same day. We had caught up with that day we had lost twelve years before on our way to Tokyo. We stood in the wind of the Poli pass and drank the wetness of the westerlies that had brought us there as they wrang out their moisture climbing the shear walls of Oahu's spectacular backbone of volcanos. We walked the colorful paths of Waikiki business center, and found time as well to spend a few hours over problems that Larry and I have been struggling with in our efforts to summarize the results of two years of study at Batu Caves in KL. Larry and Sandy were packing for nearly two years of study in the wilds of Africa and are now collecting in the backcountry of Sudan.

We roared in over the millions of sparkling diamonds of San Francisco and Ralph Audy drove us through the night along a bewildering maze of shining pavements directed by blinking lights, shunted by quivering signs and halted by blasts of red; until we registered at the Cartwright Hotel first step in our memories in reverse, and we were back in the home country. Clatter of the Powell Street Cable car awakened us to the new day and a bright new world and over the roof tops floated the full song of a Robin, singing from some penthouse garden a block away. We were the morning's first customers at a little cafe featuring excellent pancakes in bygone times and they were just as tasty as remembered, served by a middle aged waitress. As she departed with our order I wagered with Lucy that she was supporting a son in college. In answer to the unspoken question she commented in a husky whiskey voice as she passed a moment in friendly conversation that her son was a taxi driver and she was helping him through college. Mission for the morning was San Francisco Zoo and Carey Baldwin. The streetcar conductor was middle aged and very courteous to all the early boarders on his car, middle aged stenographers and clerks, and he was even kind to a drunk with a crying jag. Suddenly we were aware of the thing that we saw from coast to coast-People's age. The nation had grown from one of youth to one of midyears because of the tremendous impact of modern medicine and increased longevity. And people were courteous everywhere, taxi drivers, clerks, cops, conductors, the man on the street. Not only could people speak English, but they seemed to enjoy doing so and liked to be helpful.

Because of the day lost from our plane mixup we had to cut short our visit to Frisco. We spent a few silly hours with Carey. Any hours you spend with Carey are liable to be silly ones, for his love of life and a laugh is so contagious. Over the weekend he had bought a new red Ford, cajoling the salesman into accepting his personal check after finding enough cash in his pocket to pay for theft insurance. The previous week he had received shipment of a baby elephant which followed him from bar to bar where he bought beers for himself and the elephant to the consternation of inebriated customers. Incidentally, under his guidance the zoo has been greatly improved and is very beautiful now.

One of the problems that faced us for the entire trip was that of time. We just did not have time to see all of the people that we wanted to, and therefore we know that many of our friends will feel slighted when they read that we were so close to them, but did not visit with them. As it was we made numerous phone calls to folks in adjoining towns or States where we couldn't be. So it was at Frisco. We spent a few hours at the University of California, gave a lecture at the Hooper Foundation, saw some of the labs, had a couple of good meals at Fisherman's Wharf with old friends and hastened on to Bakersfield.

As we landed at the Bakersfield Airport I was nonplussed. It didn't seem to be the same place where I spent my quota of hours learning to be a dodo bird. Yes it was, it is the air terminal that is different. As I mulled these things over we walked inside to find Irma Weil waiting for us. She took us first to her place for a quick lunch and then we went to look after our house. We have had the house rented to the same people for many years and they had needed the storage room and had written that they had built a shed to hold our stored stuff. I was a little horrified to see that the "shed" was little more than canvas and boards piled over our belongings. I spent the better part of a day sorting things out and true to the desert climate everything was dry and all right if a bit dusty. Part of the things we left at the Dorrs where we were staying to be shipped to us and the rest George placed in storage after we left.

Another little game I was playing was first resighting of birds that I had known before. My "second firsts" I was calling them. Irma drove us up to Granite Station to see Edna Williams and I compiled quite a list: Killdeer, Northern Mockingbird, Brown-headed Cowbird, Brewer's blackbird, Scrub jay, Acorn woodpecker, Plain Titmouse, Nuthatch, Bullock's Oriole, Western Kingbird, Western Meadowlark, Horned Lark, Western Bluebird, Valley Quail, Black-chinned Hummingbird, Loggerhead, Shrike, Housefinch, Brown Towhee, and Mourning Dove. The visit with Edna was memorable. Hearing her voice, which has not changed over the years, brought back so many memories of happy field days at her place in the mountains. Lumreau, now to be made a sanctuary, where Jeannette, Cam and I followed the quail and had exciting brushes with rattlesnakes and bobcats. I was torn between spending the few hours talking with her or exploring the surround open parkland for familiar birds. Bullock Orioles and Western Kingbirds were competing for a nest site and a Downy Woodpecker was stealing acorns from a light pole cached there by his bigger relative the Acorn Woodpecker.

Back at Bakersfield we were in for a real treat. The Tokash and Dorr families had notified all of our friends that they could think of that we were coming and they had a lawn party for us. There were forty or more guests, everybody brought food and it was an old fashioned eatin-and-meetin get together. Friends had come from all over, even Earl Mock from the Bay area. Kids had grown up, teenagers were now parents, and the old folks were older, but everyone was in gay spirits and they plied me with questions about the Far East far into the night. Among other things we managed to squeeze in a short stop at the Hooper Foundation lab and a few minutes hiking around Hart Park where three years of observations have really never been summarized for

publication, and found both places much changed but recognizable.

Our next stop was at Phoenix to spend a few hours with the Christophers. We arrived after midnight having jetted across the desert, the plane about reaching its peak height from Los Angeles in time to descend to Phoenix. During each of these high flights the captain reported the outside temperatures comparing them with ground temperature. I never cease to be amazed at the minus 25 or 41 compared to plus 90 or 95. Air conditioning those cabins is surely not one of cooling the air. Lucy enjoyed the "Coffee, tea, or milk" routine on these flights, but many of them were so short or speedy that she had time for only one or two coffees. Gradually we came to designate them as "one or two coffee flights". A friend would say, "was it a nice trip?" and we would return, "Yes, but it was only a one-coffee flight", to a perplexed look.

Dawn and the brilliant desert light rang with songs both new and old. The Christophers live at the edge of town with an orange grove behind their settlement. A few minutes walk yield both life firsts and second firsts; the lovely white winged dove, cactus wren, Inca ground dove, Gila Woodpecker, Verdin, Redwing, Canyon Towhee, Sage Thrasher, Black Vulture, Cardinal, Roughwinged Swallow, European Starling, Black Phoebe, Red-tailed Hawk, Screech Owl and Kestrel. Breakfast on the patio and we visited a super-super market. This one was called Chris town. It was immense and as spectacular as the great multistoried Sears market in Honolulu. There we saw our first air lock entrance. You walk from the bright hot sun of the desert through a wide portal into refreshing coolness, but there are no doors or flow of air out through the opening. I'm still uncertain how it is done.

In the late afternoon and evening we drove out over the desert to see the cacti and the great saguaros which marched up arroyos and over hill tops. The Christophers loved the country, but we found the stark harshness of the landscape here and surrounding Bakersfield somewhat disturbing. I had loved it when we lived in the San Joaquin valley, but after years of greenness in Japan and Malaya it would take our eyes time to accept this brazen brownness.

Arriving at Chicago the next afternoon we managed to contact my half sister Mary and took a spectacular taxi ride from O'Hara Airport into downtown Chicago during which the driver explained and demonstrated the control of traffic by helicopter police high over the streets. He kept tuned to their conversation and knew just what lay ahead in the way of accidents, traffic jams, or slow up areas. A terrific way to move traffic. We had supper with Mary at another innovation, the restaurant where Dutch girls are shipped in and trained as waitresses before being turned on their own. Real nice kids and everybody trying to serve gracefully and efficiently. The gal that was serving us was practically shivering she was so nervous.

At this point we met up with another phenomenon in America; the death of the railroads. We wanted to get on to Danville that evening, and there used to be trains available at about three stations. We tried the Wabash and North Central and finally found a train on the Chicago and Eastern Illinois. Ticket salesmen were helpful, but really couldn't be bothered. We boarded the 1925 (7:25 p.m.) which was a nice enough train and Lucy was anticipating whiling away the hours in the club car or the diner. As we waited at the gate we

noticed a basket of fruit, indifferent sandwiches, and drinks on the pavement by one of the cars. "There is your dining car." I remarked and both she and Mary snorted. The train was called and we boarded. A few moments before we pulled out the conductor passed through the cars with this self-same basket. It was the dining car. Midnight arrival at Danville was unheralded. Dingy station in near ruin, no redcaps for our numerous bags, and a dyspeptic yellow cab which had seen better days ten years before. We barely made it to the hotel.

Next day we saw our lawyer, Bob Acton, and borrowed his beautiful new car for we wanted to drive out to the farm. I had an international driving license which said in seven languages that I could drive left side, right side or upside. I never did get to show it to a copy, but the lawyer was a little dubious when I waved goodbye to him and drove the wrong way down a one-way alley. We spent the day looking over the farm, meeting relatives and adding the Dickcissel, Eastern Bluebird, Eastern Meadowlark, Bronzed Grackle, Bobwhite, Wood Thrush, and Eastern Crow to my list. We stopped in to see J. L. Fairchild, one of Lucy's cousins and after a short visit turned to leave. Just as we prepared to drive away his wife, Martha, started down the basement stairs carrying a heavy milk can and tripped. The edge of the can sheared off one of her fingers and she rushed to the hospital. Later we learned that surgery successfully replaced the severed piece.

That evening we prepared to visit another relative of Lucy's. Danville was her home town so we had many people to see. It was about seven and we walked along the main street watching for an approaching city bus to take us out Fairchild Street. None came by. At the square several stone benches were occupied by men enjoying the summer evening. We approached a bench where two men were in casual conversation, one in a business suit and the other a farmer. He was an old timer, heavy shoes, faded overalls, gray hair curling about his ears and one hand held a dead cigar while the other held a candy bar on which he was munching. "Is this where we catch the Fairchild Street bus?" "Yep." "How often does it run?" pause. "About every hour, I think, or maybe it's on the half hour." We moved aside to wait and after another moment or two, "Do you know when the next one is due?" An alternate chew on the candy bar and cigar and then, "Won't be no more tonight, they stop running at six." This we found to be true everywhere, the municipal surface transportation systems were struggling to survive. Raising the fares and reducing the service was not staying the slow decline. The automobile has stifled the surface transportation and the planes have strangled the railroads. Of course, I feel that the railroads have been their own worst enemies. Over-unionized, slow to adopt modern methods, dingy stations, lack of courtesy, intercompany strife, and high prices. In one instance we wanted to take a train from West Virginia into Washington. The only train was a late one that took most of the night getting there and which arrived early in the morning. No pullman was available. The fare was 16 dollars one way. We took a plane for 18 dollars and made the trip in a couple of hours.

The next morning Jeannette and Sterling arrived and we met one of the future sons-in-law. Sterling is a tall, clean-cut young man whom we immediately liked. Of course he was somewhat terrified at meeting his in-laws, but when at

ease again, we found his ready wit and good conversation. But Jeannette could not quite prepare him for the shocks of the day. We were happy to see them, especially since they had an old car in good running order and there were no train or bus connections to Upland, Indiana. Loading up, we headed east, me urging post haste since I had to see a banker in Indianapolis and wanted to get there before the bank closed. Every road that we took ended in a detour and we had to change our course. This went on until we found ourselves at the gates of Turkey Run State Park. Time was passing, the morning was hilarious, but notwithstanding, we suddenly decided to see Turkey Run again, for we had spent our honeymoon there some 29 years before and had not seen it since. Poor Sterling was trying to make it to the bank since that was our objective, but he learned that the McClures were subject to moods, indecisions, and sudden changes of plan. We walked some of the paths of many years before and still made it before the bank closed.

We made Upland that evening and the next day was the day before graduation with so many introductions and goodbyes to say. The grads' dinner for parents and neophytes was held in the campus mess hall, a building of modern mushroom design. Taylor University has a sedate old campus overlooking the cultivated slopes of rolling Indiana. Although with a student body of less than a thousand and in a community hardly larger, it has a charm and the stateliness of many such colleges. Saturday June 9 was the great day and graduation ceremonies were held in the gymnasium. Proper words of advice and encouragement were said and the 150 graduates filed up to get their certificates, Jeannette among those few with *cum laude*. Screams and laughter, hugs and photographs, packing and scurry and the students and parents fled from the campus, like cockroaches from under a lifted wet rock.

Not only had Jeannette acquired a husband-to-be, but they had acquired a cat, a starving bedraggled sore-eyed kitten which they had nursed all the way to Danville and back. This creature had to be taken care of and put in proper hands before we could go on to Cleveland. We left around 1700 (5 p.m.) and picked up a toll-road superway reaching Cleveland about ten. The trip had been made dazzling by the myriads of fireflies that danced and flickered in the moist woods and over the marshes along the way. After a snack we called Ronald Reuther and asked for directions to his place. For nearly two hours we roved up and down the same main street trying to find the turnoff that would lead to his place. Each time we asked a gas station attendant we would be directed back down the street a couple of miles. By process of elimination we finally found the house and poor Ronny and Grace were still waiting and wondering.

The following morning was spent in visiting the zoo where Ron is assistant director. We saw many innovations in animal display here. Later in the day we visited the Cleveland Museum, a small museum, but unique in its dioramas. Most of the exhibits were still life, but an occasional one was alive. This really served to stimulate audience interest. For example, among the bird dioramas was one of owls, only while you looked at it you suddenly realized that the owls were looking back. An idea that could be expanded in many museums.

Our air ticket from Kuala Lumpur permitted all of these permutations and we continued our devious route boarding a 0915 United Flight to Washington on Monday, June 11. We were met by the Elisbergs and Traubs and went immediately to check in at Walter Reed Army Institute of Research. Jeannette had deserted Sterling and come with us. We spent the afternoon visiting the National Zoo with Bob Traub and Dr. Reed, the director, showed me plans for their new aviaries. They are planning some magnificent exhibits including walkin cages, etc. Supper at a good Mexican restaurant and a nice evening was spent with the Elisbergs.

Next day saw us on our way again, this time by Trailways bus to Richmond where my cousin Marjorie Schultze met us and drove us to her beautiful home in Hopewell. My Uncle John was very ill and Marjorie was caring for him. Fortunately he was not in pain and was rational, so he enjoyed our visit and especially the chance to meet one of his nieces. Two weeks later he passed away. I lost a life long friend and the world was poorer by the loss of a fine gentle personality. By our visit I had gone as far back in memories as possible for Uncle John was present at my birth.

We spent the night at a colorful new motel in Hopewell and were serenaded awake in the morning by the liquid notes of the wood thrush in accompaniment to the clear whistles of the cardinal. Marjorie took us to Richmond and we caught Eastern Airlines to New York. This was a one-coffee flight, but Lucy was cheated out of even the one cup. The hostess was preparing to serve when we ran into some rough air. Lucy sat opposite the kitchenette which in this plane was to the center and to one side of the cabin. The hostess had just poured a full pot of steaming coffee into a waste drain when a particularly severe bump pitched the plane and threw her across the cabin into a seat, high heeled shoes flying. When she regained her feet and composure she still had the coffee pot in her hand and would have been severely burned had she not just emptied it. She looked after the rest of the customers, but the air quickly smoothed. Our most exciting moment in thousands of miles of flying.

Before leaving Washington we had phoned Rosalie Edge, the dedicated conservationist who had conceived of and developed Hawk Mountain in Pennsylvania, the world's only refuge for hawks (at that time), and she had made reservations for us at the Adams Hotel. In common with most airports the New Jersey terminal was miles from downtown New York. We checked taxis and buses and after a little dickering took a taxi. True to the taxis that we met everywhere, the driver gave us a running commentary and sightseeing tour along the way. Here I was struck by another phenomenon which we later noticed all over the states, the tremendous automobile graveyards. Piles of old and wrecked cars in some places fifty or more feet high. Literally millions and millions of tons of iron and other metals, in most places rusting and deteriorating. Here in Malaya I constantly harp on the wanton use of forests and back home a whole resource is being unused or wasted. My questions were answered that the cost of converting the old cars to new metal was too great. Easier to finish tearing down the Mesabi Mountain Range. Oh, yes, we left Jeannette in Richmond and she caught a train back to Milwaukee.

We found the Adams Hotel an interesting and comfortable old residential just off Central park and within a few blocks of the Metropolitan museum, and in a few minute we were having lunch with Mrs. Edge. It was the first time that we had met although we had corresponded for years and we enjoyed her tremendously. After lunch we walked over to the Metro and viewed the million dollar Rembrandt that was being shown, but I just naturally gravitated into the Egyptian exhibits since I was hoping to get to see some of Egypts treasures on our way back to Malaya.

One of our objects in coming to New York was for me to attend the meetings of the International Committee for Bird Protection which had been going on all week. Mr. Loke Wan Tho, movie magnet and director of Malayan Airways, was the official representative for the Malayan Nature Society at these meetings, but I like to attend and thereby keep my fingers in the bubbling conservation pot. It was Wednesday and the members were off on a field trip. These meetings are attended by the leading bird authorities and conservationists from about thirty countries and each morning is given over to discussions of such topics as the effects of oil pollution at sea, bird losses from the misuse of insecticides, endangered species, and many related topics. The afternoons are taken up by field trips or sub-committee meetings. So Thursday morning I attended the discussion and in the afternoon we were guests of the New York Zoological Society and visited the Bronx. Director Conway showed us the many exciting bird exhibit. Friday morning there were more discussions and in the evening the closing banquet. The meetings had been held in the American Museum of Natural History and the banquet was also held there, appropriately in the great Hall of Birds. Afterward we were shown three outstanding films including the beautiful one on the Bald Eagle, which should be a must for every American.

While I was attending the meetings, Lucy and Rosalie were doing the town. In one day they saw the U.N., had lunch at the elite Colony Club, and enjoyed an afternoon performance at Rockefeller Center, Rockettes and all. The next day they went shopping. Friday afternoon I had an appointment with the Devon-Adair Publishing Company who were suggesting that I write a book entitled "A Naturalist in Japan" (later published as "Inago - Children of Rice", in 1993). My book writing has been far from successful and after three attempts I am a little dubious about trying another. Those on trees, the life of the mourning dove (later published as "Whistling Wings" in 1991), and the birds of Japan have all been deposited in the McClure archives (the circular file, so to speak.)

Saturday was one of those highspots. In the morning I made another trip to the Bronx for I wanted to talk to Conway about our zoo in KL and after studying their methods of presenting small birds, I returned to the hotel where we had lunch again with Rosalie. She had wanted to know if we were going to Hawk Mountain, but I considered it sort of hopeless for we were so rushed. With typical freeway fervency she called the Brauns at Hawk Mountain and made arrangements for them to meet us at Allentown. We caught a 1430 (2:30) plane and were met by Irma Braun who drove us through the exquisite Pennsylvania-dutch farming area. Probably many of you are not aware of the

objectives of Hawk Mountain. During the fall migration the main stream of migrant hawks flows down the eastern range and at various peaks along the Appalachian Range air currents are such that these hawks circle close to the peak to make use of updrafts to carry them on their way. This subjected the birds to hawk slaughterers who gathered on the peaks and blazed away at them. Each fall Hawk Mountain used to be the tragic place of dead and dying monarchs of the air, but due to the vision of Rosalie Edge and the years of hard work by Maurice and Irma Braun it is a hawk and wildlife refuge and most of the hawk slaughtering in Pennsylvania has been stopped or reduced. As a conservationist and birdman Hawk Mountain has always been one of the places I wished to visit. In the warm summer evening under the expert guidance of Maurice we walked to the peak and enjoyed the setting sun and evening song as one lone resident Broadwinged Hawk circled lazily over the forest.

The treat was made doubly interesting because we had been fortunate enough to pick a year of the 17-year locust. Last seen here in 1946 these longest lived of all the insects, a small unprepossessing cicada, had emerged enmasse and most of them had already passed their short adult lives and were dropping weak or dead upon the ground. I can last remember seeing them in Illinois in 1929. Furthermore, I was in a habitat I had never explored before, therefore many of the birds were new to me and my list of first and second firsts went up: Canada Warbler, Hooded Warbler, Evening Grosbeak, Baltimore Oriole, Worm-eating Warbler, Crested Flycatcher, Scarlet Tanager, Flicker, Ovenbird, Black-and-white Warbler, Indigo Bunting, Chipping Sparrow, Yellow-billed and Black-billed Cuckoos, Eastern Phoebe, Wood Peewee, Ruby-throated Hummingbird, Broadwinged Hawk.

We spent the night in a farmhouse nearby whose owners catered to people visiting the mountain and the next morning after some more birding we drove with Maurice and the McCameys to Ithaca to register at the 13th Ornithological Congress.

The next six days were taken up in continuous bird discussions, bird trips, and visiting with birding friends. Lucy stuck it out for a couple of days and then she flew to Milwaukee to continue with the wedding plans. For me the week was a refresher course in ornithology. I sat in on as many papers every day as there was time to do, and evenings of submeetings with bird-banders or friends. Many of the superlative papers stand out; a remarkable study of social and population pressures of a magpie in Australia, beautiful work with bird migration and dispersal by tracking with radar, fascinating experiments with owls and their ability to locate prey in total darkness, etc., etc. My official capacity at the meetings was performing in a symposium on birds and arthropod-borne diseases. I must say we confused the rather large audience so much that they kept us busy answering questions for nearly an hour after the formal discussions.

We spent an early morning with students working under Allen who were recording bird songs. It was a thrill to put on the ear phones and turn the parabolic reflector until every particle of song was audible. We spent an afternoon at Sapsucker woods and the research station there, which you all saw so beautifully illustrated in a recent issue of the National Geographic.

Sapsucker woods yielded a few more birds to the list; Red-eyed Vireo, House Martin, Chickadee, Bluejay, Hairy Woodpecker, Song Sparrow, Yellow-throat, Trail's Flycatcher, Spotted Sandpiper, Louisiana Waterthrush, Veery, Blue-winged Warbler, Catbird, House Wren, Green Heron, Chestnut-sided Warbler, and, oh yes, a Killdeer on her eggs, so tame that she almost let me touch her. Pettingil was accused of having staked her out purposely in order to impress the many European scientists who were present.

But enough of birding, lets get on with the story. It is still June and Sunday the 24th. We have gotten somewhat diverted from our backtracking of memories so we pick up the loose threads. I boarded a plane to Buffalo, but when you are at Buffalo, even for two hours, Niagara Falls is a must. Another loquacious taxi driver took me to view the falls. Commercialized, tamed, piped, confined, and peopled as it is, this is still one of the natural wonders of the world, but I shudder to think that Victoria Falls and Iguazu Falls will someday look this way.

The flight across Michigan was fascinating. I like prop flight anyway and we were low enough to see the Sunday boating on lake after lake, each looking like a pond with water striders and whirligig beetles skimming over it. I had twenty minutes between planes at Ohare Airport (Chicago), but this place is more like a spaceport than anything else and I nearly had to run to make it from one airline to the other. Los Angeles is even worse, you have to take a bus from one building to another. This flight was a commuters special, a DC 3 with jet hostesses who had never flown the route before. They got all confused by the time we arrived at Omaha and hardly finished serving the snacks before we made Lincoln. I hadn't had anything to eat since morning; guess I didn't have breakfast either, so I asked for seconds and found later that I had eaten the hostesses share of sandwiches as well.

The Vances met me and we had a good evening of swapping experiences since we had last seen each other 17 years ago. In the morning I had the pleasure of revisiting the Nebraska State House to see the Game, Forestation and Parks offices. Lloyd's office was a veritable museum of upland gamebirds. It seems that now Nebraska has more game than ever before and that by good management much more sporting is being provided.

We learned that there was a sort of station wagon bus that went to Ord from Grand Island each afternoon, making it necessary for me to establish contact with it by Greyhound. It is a sort of "Toonerville trolley that meets all the trains." The driver goes from bus station to bus station picking up passengers willing to go into the sandhills. Sure enough when we pulled into the bus terminal the station wagon was there and a familiar redhead occupied one of the windows. Lucy and Jeannette were already aboard. As we drove north we watched a tornado funnel drop down from a heavy cloud only to dissipate before striking the ground.

The three days at Ord were very fruitful. We stayed in Carol Crawford's beautiful home and used her nice car. We were wined and dined o that we had opportunities to meet more than fifty of our friends. Wherever we walked, where we shopped, everywhere there were familiar faces, even though we had been gone so long that clerks in the stores remembered having had Lucy as a

teacher in the war years. Because we are packrats we have stuff stored all over the country, and here in Ord was a garage full of books and collections. It was a nice tight garage and Jeannette and I spent a whole morning opening boxes looking for books and pamphlets that I needed and checking things in general. We found that one case packed with boxes of butterflies, butterflies that went back to my eleventh birthday, was still in good shape, the butterflies intact. We wrapped up the things that I needed in small packages and mailed them to Kuala Lumpur. We did this wherever we went until by the time we hit India we had nearly fifty packages headed our way. Jeannette and I visited the Aagaard place and not only enjoyed a nice visit with ~~Jeannette~~ and the family, but saw much game and then went on out into the sandhills. The sandhills are as changeless and everlasting as mountains. Of course, I had to look at some of the old Mourning Dove haunts and sure enough there were still nests. Other of the birds that we saw were old friends, but not so many new seconds now: Bobolink, Yellow Warbler, Pheasant, Orchard Oriole, Horned Lark, Great Blue Heron, Marsh Hawk, Cliff Swallow, but I didn't get far enough into the sandhills for Sharp-tailed Grouse or Prairie Chicken.

The last night we were there was a supper for us and 22 friends attended. I showed some of the moving pictures of Malaya that I had brought along and some for the still shots as well. Both Maggie Ambrose and Carol Crawford had been our hostesses during the visit which they made most memorable. The next morning Hi Anderson drove us back to Grand Island where we caught a bus to Lincoln. During our years at Ord I had as assistant and companion a youngster by the name of Bob Marks. He grew up to be a pharmacist now doing very well in Lincoln. He and Shirley met us and we spent the evening reminiscing of the days when we lived in a Ford panel truck and tramped the sandhills in search of pheasants and grouse. Many of the results of these studies have been published, but I have a manuscript in preparation now telling more.

Part of our work with birds in Malaya has been to make extensive collections of their ectoparasites. Each bird that we capture is searched for playmates in their feathers. Birds are of such geological age that many specialized critters live with them. Among these are feather mites, peculiar, elongated or hairy creatures that live in or on the feathers. Dr. Atyeo at the University of Nebraska has been receiving these specimens for identification so I paid him a visit to discuss our work. Later we went up to the ninth floor of the State House to say goodbye to Vance and then caught another bus.

This time we were to meet Frank Berry at Omaha. The years were creeping back. It was 1940 when we left Lewis, Iowa and the intervening years were bound to leave marks that would make us unrecognizable to each other. We searched the terminal, but no one looked familiar. Finally an elderly man and I stood face to face and then we recognized each other. The minute we spoke patterns fell in place. I find that voice and mannerism of speech seem to change less with the years than features. The two hour drive back to Lewis served to rekindle our experiences and friendship. It was like old times and the years ceased to exist as we sat in Ethel Berry's kitchen, ate her good food, and listened to her clarion voice recount the wonders of the day. This had been

almost a daily event during the three years that I studied mourning dove life histories for my doctorate and Frank and Ethel practically augmented the diet of two hungry kids living on \$80.00 a month.

Frank and I organized a Boy Scout troop still in existence and he had helped plan and develop a fine scout summer camp near Lewis. We spent the evening there to see the closing ceremonies and camp fire for one of the summer sessions. Several of the leaders were grownup boy scouts from our original troop. The morning of the last day of June saw Frank and me tramping around nearby Cold Springs park where we tallied 29 species of birds and watched muskrats play in the water. New additions to my list included: Red-breasted Nuthatch, Banded Kingfisher, Blue-winged Teal. Back in town a quick survey of the trees that I had once climbed while studying 2500 dove nests revealed that most of them were still alive, but the dove population was greatly reduced. I saw not a single nest, yet in my day nesting had lasted until September. In the evening the Berry's held open house for us and 25 people who could still remember us came. We were delighted, for most of the families brought youngsters who had grown up and brought youngsters. Again I showed pictures of Malaya. Interestingly enough, on the west coast it was Japan that interested people, but here in the midwest, Malaya held more romance and appeal.

Sunday, July 1, we went to Church with Frank and Ethel and then caught the Rock Island train to Chicago, where I spent the night at the Y.M.C.A hotel and Lucy and Jeannette went on to Milwaukee. Tom Scott met the train at Urbana and I was back in the alma mater for the first time in years and years. The Natural History Survey building was way back in what used to be farms when we were in school. The magnificent elms of the broad walk were all gone, replaced by young oaks and maples aspiring to canopy the walk as the elms used to do. I peeked through the locked door of the little old entomology experiment station lab where thirty years before I had spattered the brick walls while trying to white wash the greenhouses and W. P. Flint had acidly assured me that I might make a good entomologist, but not a painter. But my entomology had been bent into ecology and later wildlife conservation through contact with the vibrant personality and teaching of Dr. V. E. Shelford. I learned that he was still living in Urbana, and following a torrential tropical rainstorm Tom and I paid him a visit. He was too weak to chat long, but after a moments contemplation he remembered the rather argumentive student who couldn't get along with a full bosomed gal named Schoup. He was disappointed to learn that I hadn't married her.

I had planned to spend at least three days at the university so that I could see some of the fascinating research that is being done there. But that evening I received a call from Marjorie that Uncle John had passed away. She didn't feel that we should make a hurry trip to Hopewell for the funeral. Then my stepmother in Kankakee contacted me, and Lucy from Milwaukee. Evelyn was very anxious that we visit before the wedding so Lucy and I convened at Kankakee. But not before I had had a chance to meet the staff at the Survey, to talk shop and to give three lectures; to the Survey staff, the ecology department, and the vet department. It was hurried, but I came away with

terrific impressions of the important conservation work that is going on. Hope to get back again for a longer stay.

We enjoyed only 24 hours with Evelyn and Mary, again a hurried visit and much too short. Kankakee was most depressing. It was once one of the most beautiful cities in Illinois; great elms bordering streets of fine old homes. The homes remain, naked and harsh, with stark or staggering trees before them; Dutch elm disease. It will take years of careful planning to bring the city back to its sylvan beauty.

A few short hours of chatting and laughter with Evelyn, a visit to my father's grave and we were on to Milwaukee. Jeannette and Sterling met us; and two days to go. I've decided that weddings are designed to make women feel important and to confuse the men. Here was a gorgeous two hundred dollar dress designed for about two hours service, a house in a state of turmoil, freezers full of food, and hysteria at every corner. Lucy's niece, Phyllis Hensel has acted as confidant and advisor for Jeannette ever since she came to Taylor University. The Hensels lived in Fort Wayne, Indiana, but had recently moved to Milwaukee. They had a beautiful home in the lovely residential district bordering the lake. Lucy and I both fell in love with it. Its design was broken up in such a way that you could keep piling in guests and they didn't seem to get in each other's hair. I never have figured out just how many she was putting up by Saturday night (July 7). A beautiful modern church was only a block away and an understanding and unassuming minister had thousands of weddings under his belt. There was a bride's room and a large drawing room for receptions. It was to be a formal wedding and rehearsal was scheduled for Friday evening. All of the planning, hurrying, buying, and organization was crystallizing and so were nerves. The rehearsal was a debacle, half of the bride's maids and groom's attendants were coming from great distances (Cam had arrived the previous afternoon, her train was delayed) so they failed to appear and Jeannette was in tears. The minister smoothed ruffled feelings by arranging for another rehearsal in the morning. However, all guests and participants arrived in time for the rehearsal supper. Saturday morning everybody attended rehearsal in sport clothes and in an atmosphere of relaxation, parts and lines were quickly learned.

It was an afternoon wedding. Guests were soon arriving. The bride was sheathed in acres of silk and satin and the groom was handsome in pinstripes. The Davis' had driven in from Atlanta, Georgia, on Friday. There were relatives, in-laws, and friends from both sides of the arena and the couple had received so many gifts that they were both thankful and embarrassed. More were coming in with the guests, so we hurriedly set up a table in the entryway not noticing that it had a small sign on it offering "Please take one".

It was a nice wedding with no hitches except that as Jeannette and I started down the white carpet she stumbles and gasped "I'm stepping on the dress!" Quickly she lifted it slightly with her bouqueted hand and we regained our beat to the traditional music. I acted as the official photographer and photographed the group after the ceremony, then took candid shots at the reception. Following the cake cutting and punch drinking we returned to the Hensels and later saw the bride and groom off with a shower of rice. Cam

appropriately caught the bouquet. The honeymoon included a short trip to Chicago and then a drive around Lake Michigan and back down through Wisconsin to Milwaukee.

We were busy before the wedding, but not too busy to spend an afternoon with director Biedel at the new Milwaukee Zoo now under construction. Fabulous ideas and innovations are being woven into this zoo which will serve as a model for some time to come. They were making extensive use of glass. Most spectacular was an indoor-outdoor run for tigers separated from the spectators only by glass. The big cats lounged by the glass unconcernedly. Later the use of glass was dropped by most zoos. Difficult to keep clean and too much stress for the animals!

A moment of rest, a few goodbyes and now it was Cam's turn. First a bus to Chicago, past Jackson Park where I played as a child and marveled at the whale skeleton that hung from the roof of the Field Museum now Industrial Museum; past north shore where thousands of people lolled in the Sunday sun, past Soldier Field and the grounds of the "Century in Progress", past Adler planetarium and Chicago Museum, and plunged down into the catacombs beneath Wacker Drive. Jetting at 35,000 feet holds no qualms for me, but the savage drive slaloming among massive pillars in the labyrinth leading to Randolph Street brought me to a cold sweat. Our longest and most enjoyable train trip was from Chicago to Austin. We awakened at dawn and knew we were in Texas as we sped past a forest of oil derricks. Cam was all smiles as we pulled into Austin where Harry met us and we were introduced to our second son-in-law.

I really haven't introduced these two fine young men that our daughters acquired; maybe I should do so now. Sterling hailed originally from Milwaukee. His parents moved to Georgia several years ago and his father, Rev. Lyman Davis, is assistant pastor in one of the leading churches there. Sterling has a year to go in Taylor for his bachelors in physics; he earns his pittance operating public address systems and other electrical and radiophonic problems for the university. Both he and Harry are handy men to have around for they are good at these do-it-yourself problems. Me, I never could even assemble a Sears and Roebuck table. Harry emigrated from west Texas. His father, Dr. Eldon Miles, is head of the English department at the State Teachers college in Alpine. Both Harry and Cam have two more years to go for their degrees, Cam in biology and Harry in chemistry. As a chem major he is tops, having already completed research warranting publication. He is employed as student assistant in the chemistry department. Jeannette has employment in social work, her major, at Marion, Indiana near Taylor, and Cam works in the catalogue department of the library at Univ. of Texas. So all four of them are doing all right and handling financial problems well. And both men plan to get their respective PhDs so they have years of study ahead of them.

But to get back to Texas. In Austin we put up in a hotel for we had so much running around to do that we felt we would be imposing on any of our friends there. The Lanes had looked after Cam when she first got to Texas, Ralph was my roommate for four years at Illinois, but they lived out at the edge of town. Fortunately they had an old car they could loan us so we learned

a little about Austin's devious streets and found our way from place to place. Cam's wedding plans are somewhat of a saga. Mr. and Mrs. Wilcox, parents of one of her roommates, had offered to help her with the wedding and she gratefully accepted, but there were many things that she had to work out herself. She wanted the minister of the church that she attends to marry them, to which he agreed also saying that he would arrange for the church. So Cam went ahead, selected a suitable date dependent upon when we could be in the States, and had her announcements printed. She was on the point of mailing them when her minister called her in. He had learned that there was to be a change in the church staff and he would not be present to perform the ceremony. This shook Cam a little, but she asked about the church, only to be further shook to learn that he had done nothing. So she approached the chairman of the church board and got the date set aside. The new minister could, of course, officiate. Things staggered along for a while and the announcements went out. The church board was building a new building at a different address across town and in opposition to the usual procedures the contractor completed it about two months in advance of the time set so the church was moved to the new site and the address on Cam's announcements was wrong. She lost the preacher and the church, but she still had the man. A couple of days before the weddings she asked Harry if he had made arrangements at a hotel in San Antonio. He hadn't, but then he hadn't had his wedding suit cleaned either until the day before when his mother looked at it and found it soiled. So he called a hotel and asked for reservations at midnight on Saturday, only to be informed that they did not hold reservations after six PM. His retort was "But I'm not getting married until eight o'clock!" They said they would arrange things for him, but when the couple arrived on Saturday night no arrangements had been made, so they lost the hotel too. Anyway, San Antonio has lots of hotels.

The wedding wasn't until Saturday and this was Tuesday so we packed caving equipment in their old car and accompanied by one of their speleological friends we headed south into the cave country. We had to pass through San Antonio with a very famous zoo. A couple of hours in it were enough to show me that they did not have much to offer that we could use in our zoo at Kuala Lumpur. The zoo is in an old quarry where they had abundance of stone and all of the walls and structures were of this white limestone. We have no stone at Kuala Lumpur, and the heat reflection from it in San Antonio was terrific. I was not impressed. They had made excellent use of a stream flowing through the park.

It was two hundred miles down into the mesquite country where this cave was that the kids wanted to show me. They called it a Cadillac cave because it had easy access and you could walk upright most of the way. After engorging ourselves on barbecued beef and half gallon sized root beer, we arrived at the site in moonless darkness. The rancher under whose land it ran had dammed an arroyo and diverted runoff into the cave entrance which was an old chimney. After the rare but heavy rains in this part of Texas most of the water just drains away, but by doing this he filled the underground caverns and actually was able to see a difference in the flow of his wells. It was dry weather and no

rain in sight so we donned rough clothes, put on miner's lamps, and descended via iron ladders into the pit. This pit was about as deep as Batu Cave is high above the surrounding plain, about 150 steps. We wandered through muddy channels, some with beautiful stalactites and stalagmites until we reached a crawlway where my broad beam got stuck. I always get panicky when this happens and had them pull me out backward rather than go further and have to get stuck again coming back. My pants held, even if some of my hide didn't. We climbed out about midnight and slept under brilliant Texas skies. Mockingbirds awakened me at dawn and I did a little birding before I aroused the rest. Back into the cave we went, this time to take a stream filled cavern where we had to swim. Beyond it we climbed up about sixty feet to a room that had not been flooded; a room, not large, but carpeted and walled with crystals. Perfectly gorgeous. We were out, dried off, and in clean clothes before noon and made the drive back to Austin by late evening. Lucy was much relieved, for she expected me to be crippled up so that I would have to hobble down the aisle with Cam and that Cam would be covered with scratches and bruises.

Thursday the Miles arrived from Alpine and Harry's dynamic mother took over. We liked her immediately. Cam and Harry had pooled their resources and had bought a large, beautiful house trailer, 46 feet long and all modern with fridge, stove, and everything, and Harry was camping in it until Cam and he could live there. It looked like bachelor quarters and Mrs. Miles was horrified that a new bride would have to face it. She didn't realize that Cam knew full well and was partly responsible for the mess as she was storing her things there as well.

By now you will be getting the idea that weddings can be confusing, and as Dagwood says "Husbands are a sorry lot". The wedding rehearsal on Friday night was uneventful and the Miles sponsored the rehearsal supper at one of the Texas roadhouses. We had all day Saturday for last minute forgotten preparations. Like Jeannette, Cam and Harry had received innumerable gifts and were still receiving them. She had kept a card catalogue as they were received and had tried to write thank you letters immediately, that is until she took time off to be a bridesmaid at Jeannette's wedding. Nice record, bridesmaid on one Saturday and bride on the following Saturday. Now I must thank all of our long suffering friends. I am sorry that the weddings were so close together for nearly everyone felt that they must send gifts to both girls. It was indeed an imposition, but we thank you mightily. Cam's wedding dress was a nice, white, party-type dress and the bridesmaids were in yellow. It was an informal wedding, but the groom and his attendants wore white coats. This matter of costume had kept telephones and mails hot for weeks. It seems that mothers and maids had to be properly and similarly or dissimilarly attired. Sort of "if I wear my tiger skin, for gawds sake don't you appear in that old raccoon!". The women reading this will have to go unenlightened, for I haven't the slightest idea what was worn, its fabric, its style, or its accessories. I'm a leg and bosom man myself.

Guests began arriving and the church began filling, but the wedding had to be delayed about half an hour, for Cam had stationed one of her friends at

the church location called for on her invitation to direct people to the proper place. It was a simple and effective wedding ceremony. Cam and Harry said their lines by memory rather than repeating after the minister, which adds a lot to the feeling and the suspense of the occasion. After the ceremony the guests left for the Wilcox home and I took a few photos of the wedding group. The reception on the lawn in the soft Texas night was very nice. Of course we had a whole lot of Harry's in-laws and friends to meet since Alpine was only five hundred miles away and many had come. Jeannette's cake had been a traditional one, but Cam's was the double-ring style. This was new to us and a lovely diversion. We finally got the couple on their way to San Antonio and the party broke up.

Cam had found time to show me the U. of T. campus and to introduce me to one of the men in the zoology department who has been working with some of the material that I have been collecting in Batu Cave. He was doing some fascinating work with the physiology of cave dwellers. As we went about we met some of her friends, including the quiet young man who directed guests from one church to the other. About him there hangs a tale. On one of the main streets of Austin there is a large sign board displaying a loaf of bread. From the bread wrapper pours a continuous stream of slices. He conceived of the idea of making a large cockroach and attaching it to one of these slices so that every few minutes as these rotated one would appear bearing a large roach. He and a henchman began to accomplish this idea. In the wee small hours when the sign was turned off they mounted a ladder and prepared to attach the roach. Some late passerby saw the ladder, notified the police, and they were apprehended before the nefarious deed was finished. At the police station the cops thought that it was such a fine idea they apologized for having stopped them. They too would have enjoyed the laughs that would have roared over the city.

The following day, Sunday, July 15, we loaded all of the kid's loot into their trailer and went to spend the day with the Lanes, where we collapsed and Lucy admitted that after this she firmly believed in elopements. We enjoyed the Lanes and their nice home overlooking the city. I hadn't had much time for birding, but the list did include the Red-tailed Hawk, Boat-tailed Grackle, Roadrunners, the beautiful Scissor-tail Flycatcher, and a couple of sparrows that I did not recognize. There were no Robins this far south at this season of the year, but cardinals were in abundance. I should say that they are much more numerous than twelve years ago. Another surprise was the lack of Starlings in Austin and vicinity.

The next day we said goodbye to the Lanes and to the Wilcoxes for their wonderful hospitality and Lucy and I parted company. I flew to Minneapolis and she went to Danville. Just previous to Cam's wedding Evelyn had called me to say that she had been notified of my father's brother's death in Missouri. When Lucy got to Danville she learned of the death of a cousin's husband and she attended the graveside ceremony.

I arrived in Minneapolis, but could not find Dr. Dwain Warner who I had met in Cornell. I called Bill Sherer to find that he and his family had moved to Ithaca. I called Izumi and learned that he had returned to Japan. I tried

calling the Warner house for nearly forty-five minutes and only busy signals. In exasperation I asked the operator to check and see if the line was really in use. It was, and when I finally located Dwain waiting for me in another part of the air terminal, he explained that his house was full of teenagers. I spent the night at the club on the University campus, after a fine steak dinner and evening with Dwain at a unique restaurant called the Gaslight. Nineteenth century motif even to a menu printed as an old time newspaper.

Dwain spent a few minutes showing me his labs in the museum building on the campus and then we drove the hundreds of miles north to the headwaters of the Mississippi. The University of Minnesota has a field laboratory and teaching station on Lake Itasca, beautifully equipped with bunk houses for the students, labs, and class rooms for botany, zoology, ecology, wildlife management, and other courses. Here they were doing work with radioactive tracking of animals and were further developing the tagging of animals with tiny transmitting radios such as I had seen at Urbana. With the radioactive tracing, small pieces of wire had been placed beneath the skin of toads and their movements during hibernation had been traced. It was learned that the toads burrowed to a depth just below frost line and as winter deepened they worked lower to avoid the cold, and similarly followed it upward in the spring. The tiny radios harnessed to larger animals such as raccoons could be heard for several miles and the daily activities of the animals followed. I spent a day and two nights here giving two lectures; on diseases transmissible to man and birds, and the animals and birds of the tropical rain forest.

Within my experience no where that we have been in the Orient has there been an abundance of friendly wildlife such as you learn to know in the States. Here at Lake Itasca small creatures were in abundance; Chipping Sparrows pecked at insects or seeds about your feet, red squirrels, thirteen lined ground squirrels and chipmunks hardly stepped aside as you walked along, and on the side-roads deer stopped to watch you. My bird list of new and old friends continued to grow; Common Tern, Black Tern, Rose-breasted Grosbeak, Yellow-bellied Sapsucker, Redstart, Cedar Waxwing, Least Flycatcher, Blackburnian Warbler, Purple Finch, Myrtle Warbler, Ring-necked Duck, Loon, Osprey, Pine Warbler.

We left early for the drive back to Minneapolis and arrived there in time for me to catch my first Caravelle flight. As you all know, the design of this plane places the motors on each side of the fuselage, so that the thrust is forward along the body of the plane rather than upon the wings. It makes a difference in flying that has to be felt to be understood. Take off distance is about that of a flight deck, and the pilot retains a climb of about thirty degrees without leveling off until he attains a height of thirty thousand feet. It was my flight thrill of the whole trip, akin to the one I used to get when I practiced stalling turns. Ten minutes to cross Lake Michigan and about two hours to put down in Willow Run, where Ring-necked Pheasants fed complacently by the jet runways. There I was met by the Beardsleys.

This was another interesting development. Enroute from Japan to Malaya four years ago I took advantage of our leisurely boat trip to write a story about the ecology of a Japanese farm and all of the animal life that it supported. The

theme was woven around one season and the life in the great heronry at Sagiyaama. Like most of the stuff I put out it was not well written. Several editors returned it with wastebasket tatters, but when it reached Ann Arbor, Mrs. Beardsley reviewed it and thought that she might do a rewrite job and make it saleable. So over a delightful supper we discussed some of its possibilities.

I had encroached on other commitments for the evening so returned early to the university club. There I called Dr. Dick Weaver to repay the visit that he and his family had made to Kuala Lumpur last year. With a whoop of delight he rushed over to the club to pick me up and we all had a good talk fest. The next morning I spent a couple of hours with Mrs. Beardsley working out more details of our joint enterprise over my manuscript. We both hope that we may be able to produce a presentable story about the ecology of Japan's farms (This effort came to naught, but I rewrote it again ^{years} later and it has been published as "Inago, Children of Rice" in 1993) Had lunch with Dick and spent the rest of the day with him as he proudly showed me his new wildlife building and other developments on this immense campus. The array of medical buildings was the most spectacular of any that I had seen. In the evening the famous ornithologist from Argentine, Miss Maria Buchinger, arrived at his home fresh from the International Parks conference in Seattle. It was my first chance to discuss these meetings with a participant. The Weavers took us to a play put on by the student guild. Good, but rather ambitious as kids are liable to attempt.

One of the problems that the Malayan Nature Society is faced with is that of the proper way to store, handle, and make available to members back issues of the Malayan Nature Journal. I had opportunity to discuss this matter with Dr. Storer at the museum of zoology where he has set up a system for the Wilson Bulletin. Possibly we can do something similar when our National Museum is completed and we have a room assigned to the society.

At Lake Itasca Dr. Joe Hickey, Dwain Warner, and I spent a couple of hours discussing the controversial national and international problem of the use and misuse of chemicals for biological control and their effects on wildlife. One of the most thought provoking papers at the meetings in Cornell concerned the loss of Robins on the Ann Arbor campus following a spray program there. It was stated that for two years there had been no breeding and that there were residual deaths. The first morning that I was there I noticed the paucity of birds of any kind, and as I walked through the venerable campus I saw two Robins beneath some shrubbery. One appeared normal, but the other was staggering with typical "DDT tremors".

From Willow Run I took a Lake Central commuters DC3 down into Indiana. As I was the only passenger, it being Saturday morning and not many business men were headed for Chicago, I had a chance to chat with the hostess. She was a typical product of the age. Concerning railroads she commented, "I've seen them in pictures, but I've never ridden in one." Youth will accept the space age as readily as youth accepts the air age now.

We put down in Marion airport which is just outside town, but no taxis happened to be about so I hitched a ride from a passing motorist. I plied him

with yarns of the tropics and keeps him so occupied that he drove me all the way to Upland, where I had to awaken the lazy McClure and Davis family. It was about time to take a breather so we rested for the rest of the day and the following in preparation for a week in Washington. The kids had rented an apartment in an old farmhouse at the edge of the campus. Behind it was an old field and orchard. Here I was back in an ecological type so familiar to me as a youth, but now viewing it through the eyes of an alien, having been away so long. This unkempt orchard was so beautiful, overgrown with purple thistle and wild carrot, loaded hawthorns and ancient apple trees struggling with knobby fruit, that it felt as though I was in an extraterrestrial but familiar land. Monarch and tiger butterflies were avidly feeding upon the nectar of the thistles, Cabbage and sulphur butterflies flitted from flower to flower, while overhead a pair of Chimney Swifts wheeled against scudding clouds. In the wet of the morning House Wrens disputed territories while a disease ravaged elm was hunting ground for Downy and Red-headed Woodpeckers contested by three performing Flickers, and surmounted by a gloriously singing Cardinal. Thirty-six species of birds graced the area adding the Grasshopper Sparrow and Eastern Goldfinch to my list.

Calling ahead we made arrangements for the Tillinghasts to meet us. Janet is one of Lucy's cousins. The plane we were to take from Marion was cancelled, so we called poor Sterling and Jeannette from their jobs and they drove us up to Fort Wayne. Wherefrom by devious routes and several changes of planes we made it to Charleston, West Virginia by nightfall. Jack and Janet met us and drove us to Madison after showing some of the capital after dark. Jack is a consulting forester and I had the pleasure of spending the next day with him while he jeeped through the coal-mined hills to various backwoods sawmills and lumbering operations. It was most amazing to see the local people respecting his advice concerning proper forestry practices. Birds were abundant, but I saw only the Carolina Wren "new" to me.

The next week was in the Washington merry-go-round. We had so many official problems to take care of and there wasn't a jeep handy like in Kuala Lumpur so I spent thirty dollars in just a couple of days of running around by taxi. I was real shook, but fortunately it was official business and I was reimbursed. There were still many people to see and problems to be discussed. At the National Museum, the entomology department had been moved to a building built for a laundry. I discussed the collections of Malayan insects with Drs. Wirth, Burks, and Drake (who used to be my senior advisor at Iowa State College); at the Patuxent Research Center I discussed banding and migration problems with Mr. Duvall and visited a few minutes with Carlton Herman. Back at Walter Reed I gave a lecture to the staff, etc., etc. In between all of this rushing we visited with the Elisbergs and the Traubs, and tried to scrape enough money together for the rest of the trip. You can cash a personal check in Bangkok or Timbuctoo, but don't try it in Washington.

On Friday, July 27, we again caught the Trailways bus to Richmond as we had done earlier in the tour. Marjorie and George met us and wined and dined us and then we drove on to Hopewell. We spent the next day viewing Jamestown and Williamsburg. These two foci of American freedom and culture

are an absolute must. They were the best organized and most effective historical monuments that I have ever seen. The most impressive thing about them was the attitudes of the guides and performers. The success or failure of such places rests entirely on the people, for they can imbue the exhibits with spirit and meaning, and this they were highly trained to do. You came away glad that you were an American and filled with hope for the future.

Sunday was a soggy one so we relaxed and then back to our throes with Washington. Marjorie, springing from the same family tree as I, is about as "buggy" as I am so their house was full of birds, fish, frogs, etc., and we had a wonderful communion of "bugginess".

Back at Washington there was the last minute rush; getting passports and visas, checking flights and reservations, checking orders and health records, but we found time for a nice party at the Traubs and an unusual evening with the Hermans. Those who know the Hermans know that any evening with them will be an unusual one; Estelle holding her own against four really fine sons and Carlton. We ended up visiting their birdhouse factory and gorging ourselves at the ice cream emporium on the University of Maryland campus.

So the Stateside story ended. August 1 we boarded a train to Trenton, New Jersey, and a taxi to Maguire Airfield where we took our places with 150 other people on a chartered Pan-Am flight to London. We landed at Mildenhall airport the next morning and found that we were still many miles from London, but the bus ride into town took us through the wonderful English countryside. Our hotel was the Strand Palace near Charing Cross. We were mixing tourism with business, but you can't see London in four days. We had had trouble all along trying to get a visa for India so spent the better part of our first morning with this problem. Then Lucy and I split up, she went to the Tower and I to the Museum of Natural History. There I met the men who knew Lim Boo Liat of our lab and who were cooperating with us on some of our bat studies. Here I bumped into Dr. T. C. Maa of the Bishop Museum. It is so normal to meet people far from home that you expect it. It goes without saying that I spent some time with Robert Spencer at the Bird Ringing Committee office, since all of our ringing records are there and we are trying to get more banding under way in Malaya. Incidentally since our return to Malaya we have word of a Night Heron shot on the east coast and bearing a Russian ring. This is terrific, and we hope that we can verify it. This could mean that it was banded in Siberia and made the trip all the way to Malaya.

We called the Earl of Cranbrook who had invited us to stay at Great Glemham House if we had time and Lady Cranbrook offered to meet the late afternoon train. Lucy did some more sight seeing and I made a hurry up trip to the Whipsnade zoo, a most remarkable and extensive zoo, and then we embarked on one of the most enjoyable weekends of the entire trip. Glemham House is near Saxmunden in Suffolk. It is a grand old place amid age old English oaks and in the rolling fertile countryside of eastern England, only a few miles from the North Sea. We had been fortunate enough to come to England during some extremely fine warm weather permitting everyone to enjoy outdoor activities, and in addition it was the National Bank Holiday. The Earl has been doing a lot of bat banding so we spent the evening on a small city

dump nearby where the bats usually congregated. Small field crickets fed in this dump and at dusk they began to fly from place to place. The bats came to feed upon them. The Earl and his helpers put up two mist nets. As a bat would approach a net the Earl would toss up a pebble and as the bat dived to investigate it the people holding the net would attempt to sweep it up. There were not many bats active that evening but we captured three, one of which was two years old and had been caught repeatedly.

Sunday broke clear and I rolled out early to have my first look at really new birds, some of those of the English farms and woods. In the parks of London I had seen the Blackbird, so much like our American Robin only black. The genus *Turdus* is circumpolar and they all look like robins done up in different color schemes, a most homogeneous group. On the Glemham grounds and nearby I found the Grey Heron, House Martin, Mallard, Black-headed Gull, Moorhen, Ring-necked Pheasant, Ringed Dove, Blackbird, European Starling, Rook, English Sparrow, Great Tit, Barn Swallow, Golden Pheasant, Pied Wagtail, Lapwings in glorious flocks, Yellow Wagtail, Crow, Mistle Thrush, Turtle Dove, Partridge, Willow Tit, Wren, Robin, Bullfinch, Lark, Goldfinch, Sand Martin, Little Grebe, and Jackdaw. Later in the day we went to an inlet from the sea and saw Oystercatchers, Sheldrakes, Redshanks, and other shore birds; and Night Herons had just recently left a heronry in a small pine woods.

The Earl took us to nearby Framlingham Castle which was a real thrill to me. American kids are steeped in the traditions of knighthood and Sherwood forest, and I doubt that the Earl realized what a genuine thrill it was to me to climb about the walls and parapets of the real thing. This is a beautiful castle build nearly nine hundred years ago. The central buildings were gone, but the walls in good preservation. We looked down from the walls and below the local swains were boling on the green; we paid a call on one of the Earl's farmers, and it was time to catch the evening train to London.

What were my impressions of England; probably not what would be expected. The impeccable farms for one thing. The two island empires at either end of Eurasia have so much in common, energetic races, early feudal systems, strong individualistic culture, and impeccable farms. The farms are not comparable, but the countryside is a glorious green. The lack of reconstruction in London. London has that look of having always been there. There was some new construction, but it was dwarfed by the very vastness and agelessness of the city. And then there were the girls; short dresses, blue eyelids, and loose brassieres revealing much more bounce than the Maidenforms of America.

It was a cold drizzling day when we left the victorian Russels Hotel and boarded British Eastern Airways to Athens. A short stop at the airport outside Rome, just long enough to buy a few souvenirs; they didn't even take us over Rome, and we were over the blue Mediterranean into the Aegean and back two thousand years. The approach to the Athens airport is most impressive with low mountains covered with dazzling white stuccoed buildings.

Athens - I'm tempted to degrade into a travel folder. The true joy of anticipation is its fulfillment. Some places satisfy anticipation to repletion, Ankor Wat, Bangkok, Luxor, and the Parthenon. We were booked at the

Academia Hotel and had a corner room that looked out to the brilliantly lighted acropolis. Athens was a seething mass of activity. Construction was everywhere, new buildings going up in nearly every downtown block. There was a sense of pride and energy that permeated the air. The antiquities are greatly appreciated and are being preserved or renovated beautifully. Tourism is big business, but you feel a pride and reverence in them rather than crass commercialism. Part of the daily activity springs from their working hours. The shops open around nine o'clock and close at two p.m. Then they open again at five and remain open until eight or nine. The hustle and bustle of people hurrying to work at five and cuing up again at nine. For those who commuted, and it seemed to be nearly everybody, this system meant four bus rides a day instead of two. Oddly enough the shop keepers, clerks, and office workers did not seem to resent the system and when two o'clock arrived you were politely ushered out and the place closed. We made the mistake of checking out of our hotel before two and then we couldn't find a place to go until opening time again. White buildings, white sunlight, and violent traffic. We liked Greece.

In the two days we saw the most prominent features of Athens, the temple of Zeus, stadium, palace guards, and the National Museum where we were shown the most exquisite examples of Greek art. The acropolis was reserved for late afternoon so that you climbed the stairs in the cool on shore breeze from the Aegean and viewed the most beautiful of all buildings in the yellowing light of the setting sun. Of all things the Parthenon is the greatest monument to man's avarice and hate. Revered for two thousand years by Greeks, Romans, Byzantines, and Turks, and destroyed by Christians in 1687. A place of sacred beauty until the fall of Rome and a walled fort during the savage middle ages.

A delay in take-off brought us into Cairo late in the evening where we were met by members of the Navy Research Unit and driven the many miles, over an hour, across the city to Harry Hoogstraal's modern home on the outskirts. He had a previous engagement and did not return until midnight, but his household looked after us and we enjoyed the relaxation of his patio. It was eight years ago in Northern Thailand where I first saw the peculiar Hoopoo, which looks like a cross between a flicker and a sandpiper, and I had not seen it since, but the next morning we ate breakfast in the same patio and watched eight of the bizarre creatures searching the garden for insects. They hop around on the ground probing the soil with their sickle bills which protrude from a heavy head surmounted by a ridiculous crest.

We spent the day visiting the lab and talking about kindred problems with several of the personnel, and after quizzing Harry we decided to go to Luxor by train and made the necessary reservations with a tourist agency. The museum closed at noon and we had only a few minutes to look at the startling array of objects taken from Tutankamen's tomb. Much of the jewelry was as modern as tomorrow. It seemed incredible that so many things could have been piled into one crypt, and when we viewed the small tomb while at Luxor it seemed even more incredible. Things must have been piled right up to the roof. Again there were impressions; the noise of the streets with innumerable horns used in place of brakes or clutch; women in black shrouds nursing their babies

in the squalor of the streets; the new piled hodge-podge on the old; a sense of tremendous antiquity, an antiquity dominated by the Byzantine; a squalid culture dominated by mosques; domestic animals hardy and hungry. For six thousand years the mud of the Nile has been patted into bricks, sundried, and used in construction. An older building is built upon, using the same style and the same material which in a few years looks as old as the antiquities. This is what gives the impression of great age and universal dirt.

But nothing modern can dim the works of the past. We spent the following day climbing about the pyramids. The ascent into the crypt in Cheops is a tremendous experience, climbing though a mountain of fitted stones to a height as great as that of my tree platform and you are in the very center of the mass. Rameses the second left his mark in this part of Egypt as well as at Luxor and we saw his colossi. The step pyramids were most interesting and I could only marvel at the tomb inscriptions which showed a culture so close to nature that the very writing was of natural objects; hawks, owls, geese, snakes, flowers, etc.

We had been warned not to go to Luxor at this time of year and certainly not to go by train, but we boarded the night train and found the compartment comfortable and the train no worse than the ones we had been experiencing in the States. It was hot, but that was to be expected and we awakened to find that we were sleeping in small dunes, for a sand storm had arisen during the night. The hot season is not the usual one of tourists and accommodations were limited to one hotel, the Luxor, situated directly across from the stupendous temple of Luxor. But other tourists had not worried about the heat either and the place was jammed. We could not get a room until evening while temperatures in the shade of the porch zoomed up to 107. An elderly man was our guide and he was excellent.

I was glad that we were not with a party, for I could not wait to see Karnak. On my list of musts to see are Ankor Wat, the temple of Karnak, and Chichen Itza and I have been fortunate enough to see the first two. This great mass of ruins covered two hundred acres. Like the Greeks, the Egyptians are doing a wonderful job of reconstruction. The fallen blocks are carefully laid out and then replaced. Where stones are completely missing the voids are filled with reinforced concrete, so slowly the great temples are rising like a phoenix from their own ashes. It is futile to try to describe such a monument to man's tremendous energies and to his ego. Past issues of the National Geographic have beautifully illustrated it and there are numerous guide books. The temples were under almost continuous construction for two thousand years each pharaoh or ptolemy trying to leave his mark and to further sanctify the place. At its heyday, about 1400 B.C., it must have been a place of great beauty and color. Much of the color remains today. I walked among the great columns and in the inscribed halls and the next afternoon while others were in siesta I explored further; the outer stones were as ovens, within the temperature was bearable.

At sundown of this day we explored the Temple of Luxor, another great monument to Rameses II and Seti I. Alexander the Great was a smart one. He remodeled one of the halls, but mollified the priests by retaining the proper

motif and his own ego by having images of himself carved on the walls as a pharaoh greeted by the gods. A sundown sail on the breezy Nile cooled us down and added romance to the evening.

Sunday morning, August 12, we crossed the Nile to the Valley of Tombs. The massive sandstone cliffs beneath which the tombs had been dug were raging furnaces of heat soon after the sun had risen. Even the local folk avoided the valley after eleven. We went into the tombs of Tutankamen, Rameses I, and Seti I, as well as those of a couple of noblemen including that of King Tut's prime minister. Again the wall carvings were beautiful and depicted the details of the life of the times. However, the most graceful structure in the whole area was the temple built by that strong willed female, Queen Hat-shupset, who so dominated her men folk and ran the country (unbecoming of a woman at that time) that her brother-husband defaced every one of the images except that in the sacred precincts of this temple as soon as she was deposited beneath ground. He tried to pull down the tremendous obelisk that she had erected at Karnak, but even three thousand years have failed to shake it.

Our return trip to Cairo was equally as sandy, but the McClures can sleep most anyplace, so we arrived at Harry's a bit grimy, but nothing that a shower and shave couldn't fix up. Again we visited the lab and also took a hurry up look at Farouk's Palace and the Cairo Zoo. The palace was in the poorest taste imaginable. Farouk cared nought for Egypt and it is a marvel that they let him stay as long as they did. We were impressed by Nasar's programs. He has begun to pull Egypt out of its morass by a very fundamental approach, fresh water piped to every village, rapid expansion of rural electrification, and free education to college level. The people that we talked to, our guides for example, felt that they as well as others were better off because of him.

Another night flight brought us into Bombay at dawn and we were met by Dr Abdulally of the Bombay Natural History Museum and a driver from the Rockefeller lab at Poona, 130 miles away. After making arrangements to see the museum when we returned, we took the beautiful drive up the escarpment behind Bombay to Poona at 1800 feet above sea level. Again we ran into national holidays, Mohammed's birthday in Egypt and Independence day here, so the Lab was not in operation, but Jean and Hal Trapido showed us about. They have a nice place at the edge of town and in the evening, as at Harry's, we had the fun of dickering for souvenirs with a house vendor. In each case we came away feeling that we had been robbed, but treasuring our loot.

The habitat around Poona is overpopulated and completely disturbed, but the next morning Dr. Trapido drove me out to a military reservation where hunting for game was not permitted. I have rarely seen a habitat so saturated with birds. You could stand by the roadside and see several coveys of quail moving about and partridges fed in full view. Harold is a bird watcher himself so he knew where to look and our morning's list was a good one; White-cheeked Bulbul, House Crow, Rose-ringed Parakeet, Vultures, Common Myna, Redstart (different from the American species by the same name) Crested Lark, Indian Robin, Black-eared Kite, Little Brown Dove, Striking Grey Hornbills with a most peculiar call, Red-vented Bulbul, Weaver Birds, Barred Quail, Pied

Bush Chat, House Swift, Schach Shrike (I remember how numerous and colorful they were in Taiwan last year), Spotted Munia, Common Babbler, Painted Partridge, Blue-throated Bee-eater, Tailorbird, Rock Bushquit, Common Iora, Red-wattled Lapwing, Coppersmith Barbet, Black-bellied Finch-lark, Common Coucal, Dusky Crag Martin, and Grey Babbler.

Because of westernization big cities are about the same the world over, and Bombay was no exception. Around Poona we felt that we were getting a glimpse of India's problems. We were not impressed by the so called attempts to improve her conditions. People proudly called attention to factories and failed to notice the desperate hovels beside them. Where in Egypt we could see the farmers bettered by a good farm program, in this part of India at least, we failed to see the benefits of this industrialization. It seemed as though India was copying the western mores and deteriorating it in the same process. Someone put it well saying, "In Japan if the country becomes ugly, the people make it beautiful, but in India if the land is ugly the people do not recognize it so it becomes uglier." The Indian is concerned with self and the metaphysical not with his physical environment.

Back at Bombay I had forgotten to notify Abdulally that we were coming and our phone call took him from a busy afternoon. We attempted to do some birding in hills covered with palms just outside the city, but his old car broke down and we had to hitchhike and taxi back into the city. They are doing some very fascinating bird banding along the western coast of India and have already had recoveries from Russia. Their flyways are far to the west of us and I doubt if any of our migrants come that way.

Lucy had been reading travel folders again and wanted to stay at the Hotel Taj Mahal. We found it ornate, western, not too expensive, and with a beautiful view of the bay. A night there and we were on to Bangkok, putting down in the airport there just 82 days after having taken off; we almost made around the world in 80 days. Well, Bangkok is more or less home to us by now. We holed up in the Europe Hotel and spent four days resting. That is, we were resting compared to the rest of the trip. I spent some time with Scott Halstead at the Army lab where we discussed bird and virus problems and we had a meal with him and Tot. He has a bird netting team which goes out each morning at four so I went along and watched their methods. Their netting area was within the city limits and the birds were familiar since city birds are much the same throughout southeast Asia. Blanford's Bulbul was the last new one to add to my list for the trip. We also visited with Dr. Boonsong and met some of the members of the newly formed Bangkok bird club which is beginning some banding work, and of course, I made it to the zoo and the bird shops.

Tuesday, August 21 we boarded Thai Airways and landed at the Kuala Lumpur airport at seven p.m.; home again after 87 days and 43 stops. We were amazed and pleased to find a delegation waiting for us, most of the USAMRU staff and many of the folks from the university. We got home to find the house spic and span, Ah Foo and family all smiles and all the birds okay except for a myna (victim of a rat), the dogs were even glad to have us back. We had supper with the Hendricksons and then back home. The job of settling in, catching up on correspondence, picking up the loose ends of research projects,

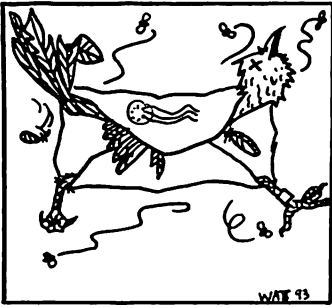
and the tallying of accumulated data still goes on. It will probably take me another month to catch up. I have tried to help the zoo planning committee with the numerous ideas I picked up from zoos along the way, and I found that I had been elected president of the Malayan Nature Society, so this has meant acquainting myself with the many details of this office as well. It looks like a busy year ahead.

It was a trip of a lifetime, enjoyed and appreciated to the fullest, and best summarized in this way. We were gone 87 days, visited 18 laboratories, 12 museums, seven universities, and ten zoos. We attended two conferences and I gave seven lectures. We attended one graduation, two weddings and there were three deaths in the family. We spent a night in cave exploration, an evening at a Boy Scout camp, and went sightseeing to Niagara Falls, London, Athens, the pyramids, and the great temples of Luxor; and we enjoyed meeting numerous friends. How numerous is evidenced by our autograph book which we carried all the way, our hostess book we called it, more than 670 names. And I birded all the way.

As a sequel to this world trip I should say that Jeannette went on to the University of Chicago for her Masters degree and Sterling, caught up in the Vietnam conflict, went to sea as an officer. The separation of several years wore on them and resulted in divorce. Jeannette obtained a Doctor of Social Work (DSW) from the University of Southern California and in 1980 married psychiatrist Dr. David Powles. We were back from Thailand by then and attended both her graduation and marriage.

Cam and Harry lived in their trailer, went to the northwest where he worked on his PhD in biology (fisheries) and she bore him a son, Forrest, in 1972. She was now working as a librarian, but this marriage also broke up. In grief she brought Forrest and visited us in Bangkok, overstaying her visa by six weeks. We had such a good time showing her Thailand that we forgot to check her passport for the time restrictions. A sympathetic immigration officer overlooked our misdemeanor and she was allowed to return to the U.S. without recriminations. Later, working as librarian at the great Hughes plant in Los Angeles she met an engineer, Bob Folk, and married him. She bore him a daughter, Heather, in 1978. Jeannette and David adopted a baby son in 1988, so the McClures lived to see three grandchildren!

31. M.A.P.S.



We had been overseas twelve years, seven in Japan and now five in Malaya, the entire time involved with studies relating to the ecological patterns of human diseases, insects, birds, and mammals. We were still no closer to discovering how the virus causing Japanese encephalitis entered the ecosystem. The studies in Japan had led to a pattern of action that is still in use today, although now an effective inoculum has been developed.

As spring releases mosquitoes from winter hibernation, the most important vector being one with a long name *Culex tritaeniorhynchus*, they bite birds either picking up the virus from them or some other source. The virus develops quickly in birds and the mosquitoes can carry it to mammals, pigs, horses, cattle, where it is further augmented until it can now spill over into man, usually in late summer. The blank in this syndrome remained as lack of knowledge as to where the virus spends the winter.

Hokkaido does not have endemic encephalitis so the pigs there do not contract it. When an animal suffers with the disease antibodies are developed in its blood which fight the virus and later protect the host from further infection. Hokkaido farmers commonly sold the young pigs from early litters to farmers in Honshu, or around Tokyo, where they were fattened for market and where they were exposed to *tritaeniorhynchus*. They quickly contracted the disease, having no antibody from their mothers to protect them. We had found that where only a few mosquitoes would bite birds they were attracted to pigs and thousands would bite a poor pig in a few nights, therefore when the pig was sick with encephalitis it could seed that many mosquitoes with the virus. This happened in the summer, the disease then appearing among children late in the summer. Having learned all of this the medical world had a tool. Veterinarians watched pilot pigs and when they became viremic, the vets notified medical doctors to watch for the infection in humans. Alerted in this way the summer epidemic could be headed off or truncated and children's lives saved by prompt and good hospital care. But where did the virus come from? Could migratory birds be involved?

Many ornithologists by watching from whence birds came and where they went each spring and fall had drawn tentative migration routes for common species, especially ducks. Japanese biologists had done a little banding without many returns and in our studies at Shinhama and Sagiya refuges we had banded nearly 5,000 young egrets and herons with poor quality rings from which we had received no recoveries or returns. It was still suspected that migrating birds could move the virus in the spring, but where did they come from and where did they go. It was important to learn this because if they were to be involved with the virus, they must overwinter where it was indigenous.

In 1963 I was approached by Air Force Colonel Charles Barnes with the proposition that the Air Force was interested in this problem and I seemed to

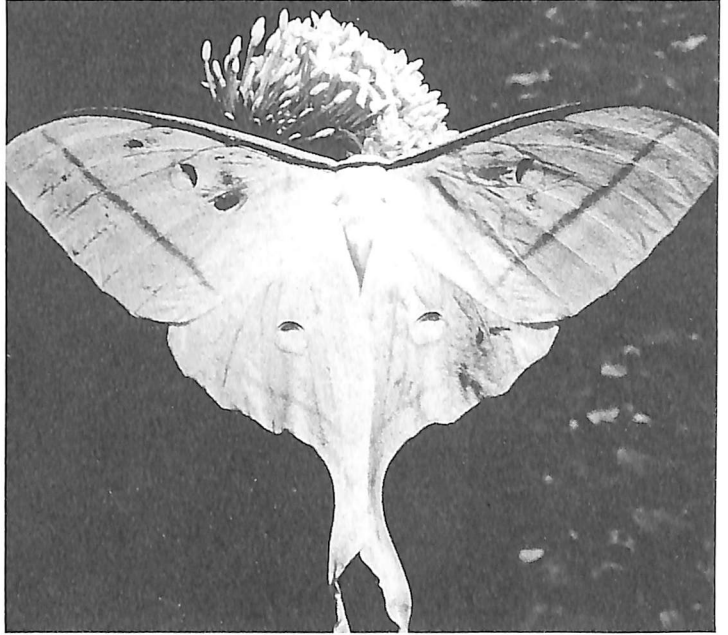
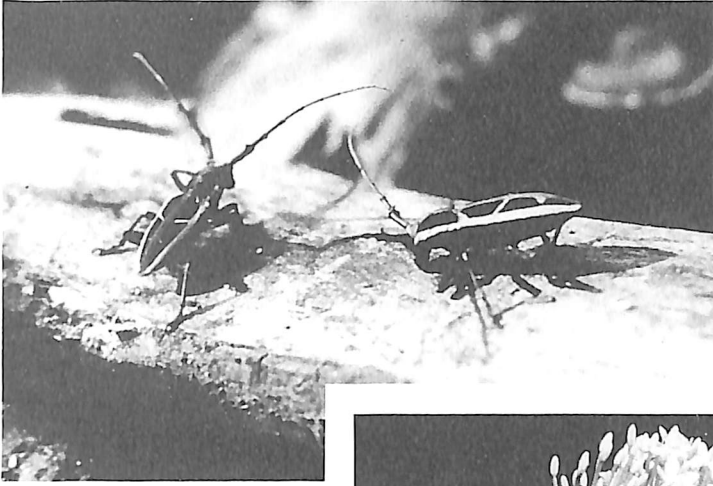


Figure 62. Denizens of the forest. *Upper left:* Longhorn beetles fighting. *Upper right:* Tropical Luna moth. *Lower left:* Black scorpion. *Lower right:* Marching termites (1967-1968).



Figure 63: *Upper:* Using a telescope to observe animals in the canopy. (U.S. Army photo) *Lower:* Siamang, a gibbon of the canopy (1962).

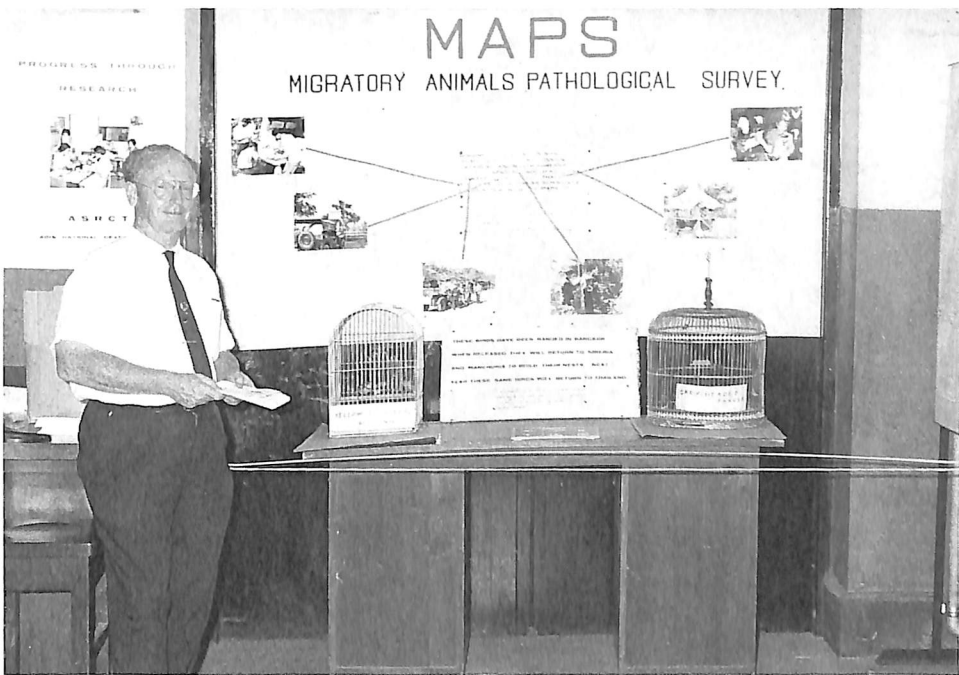


Figure 64: *Upper:* Glen and Beverly Sanderson put a radio transmitter on a *Rattus mulleri*, Kuala Lumpur (May, 1963). *Lower:* Demonstration of MAPS work at Chulalongkorn University, Bangkok (1967).

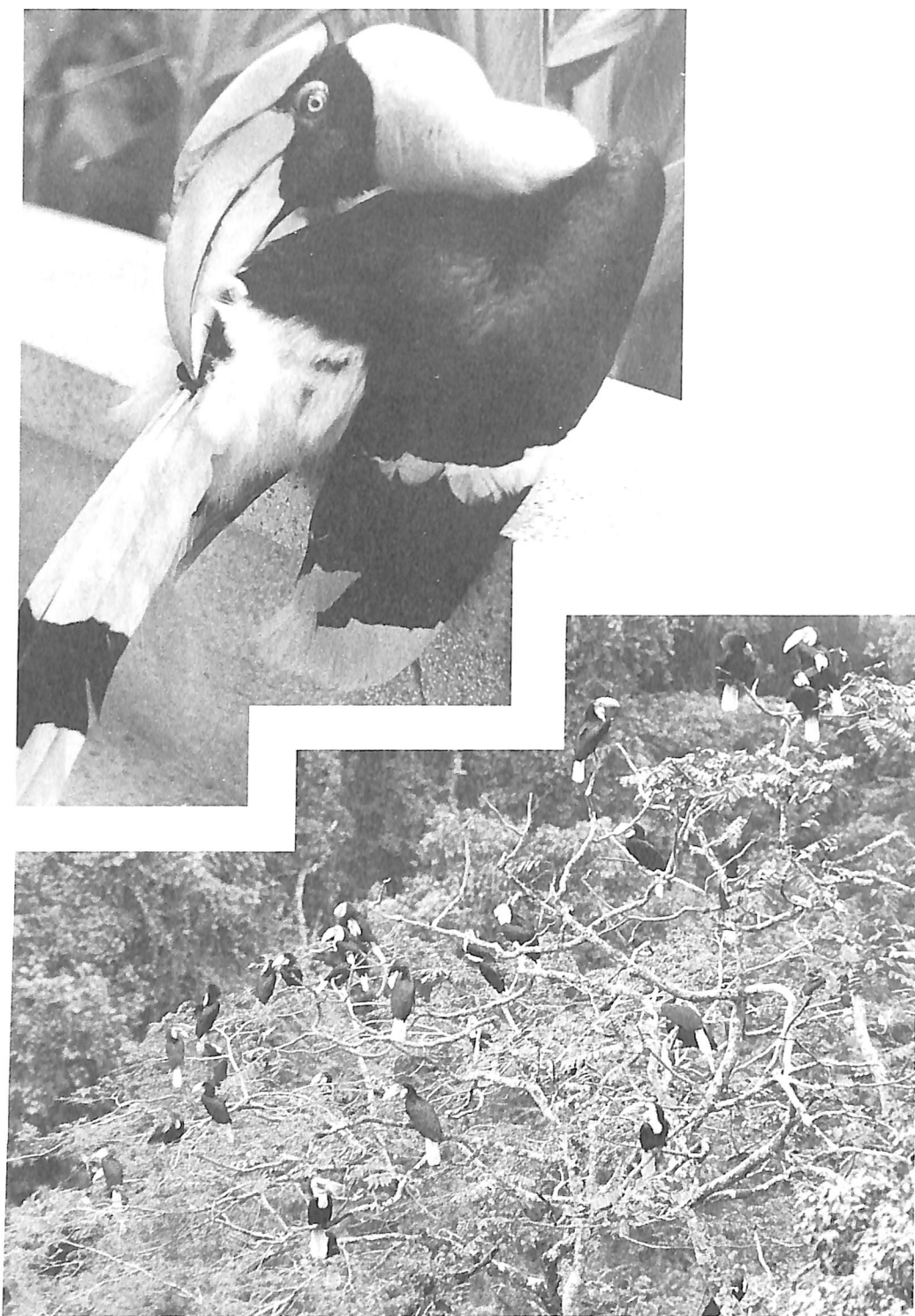


Figure 65: *Upper:* “Big Baby,” a female Giant Hornbill preening and painting, Bangkok (1971). *Lower:* Wreathed Hornbills at a roost in Khao Yai National Park, Thailand (November, 1981). (Photo by A. Tsuji)

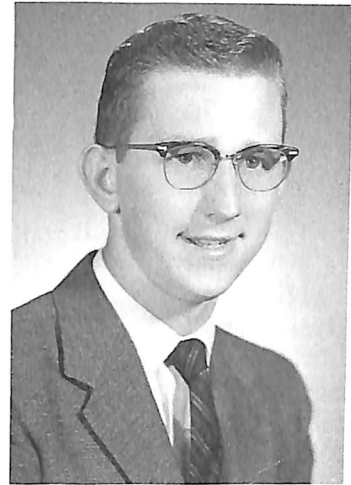


Figure 66: Katherine Buri, an ardent conservationist, with her hornbills saved from petshops. *Upper:* Bangkok (1986). *Lower:* Bangkok (1990).



Figure 67. *Upper:* Pilai receives her diploma from King Bhombipol of Thailand, Chulalongkorn University (July, 1971). *Lower:* Jeannette graduates from Taylor University, Indiana (1962).

APPLICATION TO MARRY A MC CLURE



Full Name: Sterling Evans Davis
Home Address: 18 Inman Circle N. E.
Atlanta, Georgia
Birthdate: February 10, 1941
Birthplace: Minneapolis, Minn.
Father: Lyman E. Davis
Mother: Ruby E. Larson Davis
Father's Occupation: Assistant Pastor of Church and
Part-time social worker (the latter is not
a paying job now)
Graduation Date: BA (BS) BA 1963
Additional Education Intentions: MA(MS) Yes Ph.D. no
College Major Subject: Physics
College Minor Subject: Math
Present Income: \$1200 (yearly and outside of any parental
help)
How College Curriculum is being financed: Parents (half)
and Sterling (half)
Ambition for Future Employment: Radio engineering and
along these lines
Opportunities for Future Employment: Anywhere!
Tentative Date For Marriage: September 1, 1962
Expected Income After Marriage: \$3,600 for at least one
year after marriage and then the Armed Forces
might step in!
Hobbies: 1. Radio repair
2. Stage Lighting
3. House Wiring
4. Avid music collector
Height: 6'0"
Weight: 160#
Color Hair: Blondish Brown
Color Eyes: Hazel

Figure 68. Sterling Davis' "application" to marry Jeannette McClure. (1962).

APPLICATION TO MARRY A MC CLURE



Full Name: Harry McCauley Miles
Home Address: Box 865, Alpine, Texas
Birthdate: April 17, 1942
Birth Place: San Antonio, Texas
Father's Name: Elton R. Miles
Mother's Name: Lillian Miles
Father's Occupation: Ph.D. University of Texas; Head of English
Dept., Sul Ross State College in Alpine; Annual Income: \$12,000 (before taxes)

Graduation Date: BA (BS) May '64 or before
Additional Education Intentions: MA(MS) MS Chemistry; Ph.D.
Chemistry
College Major Subject: Chemistry
College Minor Subject: Math., Economics, and Philosophy
Present Income: \$40 a month (teaching assistant)
How College Curriculum is being Financed: Parents
Ambition for Future Employment: After completion of education:
Teaching and research
Opportunities for Future Employment: After education: Good
Immediate Future: Hospital Laboratory Technician, Movie
Projectionist, Professional Musician (Trumpet, Sax, Bass, Drums and
French Horn) Chem. Lab Instructor
Tentative Date for Marriage: Depending on your arrival in the U. S.
Expected income after marriage: \$100 per month from parents,
\$60-100 working, \$50 Cam in Library. Total: \$200?
The \$100 per month from parents is on top of the tuition
and fees. If I am not in school, I do not receive anything.
Hobbies: Speleology and Cam, Mountain Climbing and Cam.
Height: 5'7"
Color Hair: Brown
Weight: 143 Before Christmas Dinner, 149 lbs. after
Color Eyes: Gray, green, blue, depending upon temper.

P.S. After all of the good things that Cam has told me about you, I
am looking forward to meeting you. You both sound like very fine
people.

We have all had a lot of fun with this application. I must say that
it is worthwhile to go through red tape for such a wonderful girl.

Figure 69. Harry Miles' "application" to marry Cam McClure
(1962).



Figure 70. Upper: Jeannette marries Sterling Davis, in Indiana. Lower: Cam marries Harry Miles, in Texas. (Both in July, 1962).



Figure 71. Wedding montage. *Upper:* Cam, McClure, Jeannette and Sterling Davis, and Lucy. *Middle left:* Lucy and Evelyn McClure. *Middle right:* Cam and Harry Miles. *Lower:* Proud parents with Cam (All July, 1962).

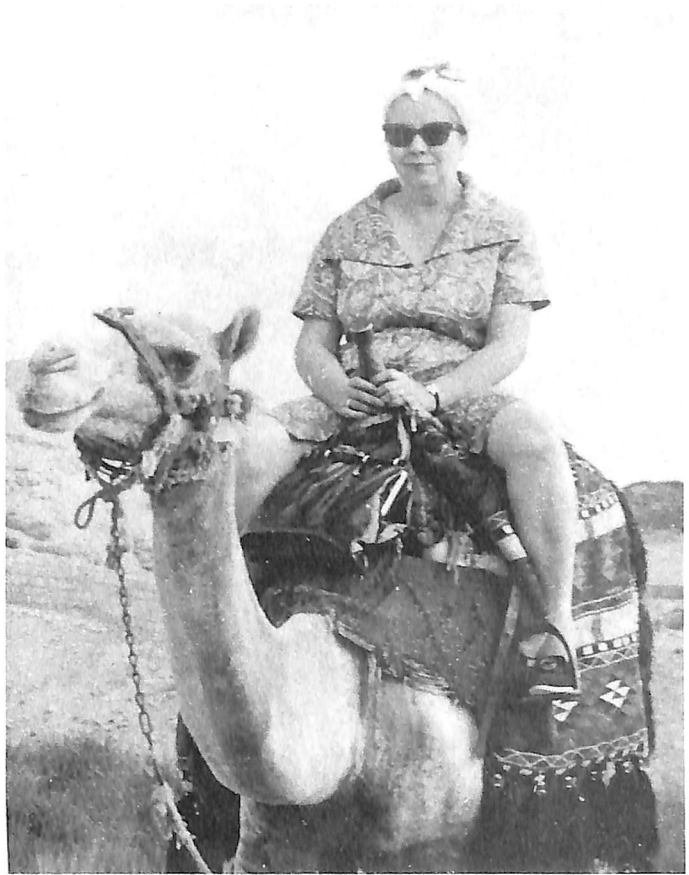


Figure 72: Tourists a la camel, Egypt (1962).



Figure 73. *Upper:* Cam marries Robert Folk Jr. (9 March, 1974). *Lower:* Jeannette marries Dr. David Powles, Los Angeles (14 February, 1980).



Figure 74. Upper: A flood water sampler used in *Leptospirosis* studies in Malaya, 1962. **Lower:** "Buttons" our Collared Scops Owl that lived with us for 13 years. (1960).

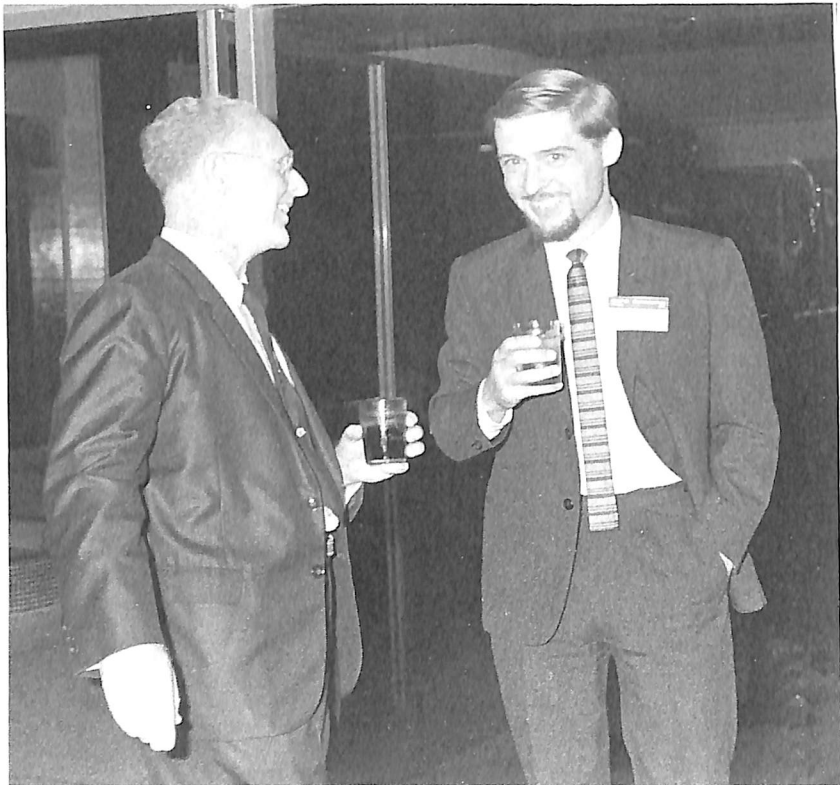


Figure 75. *Upper:* Lord Medway (Earl of Cranbrook) and M. Yoshii at MAPS meeting in Taiwan (1963). *Lower:* McClure and David Wells attend a conference in New Delhi (1968).

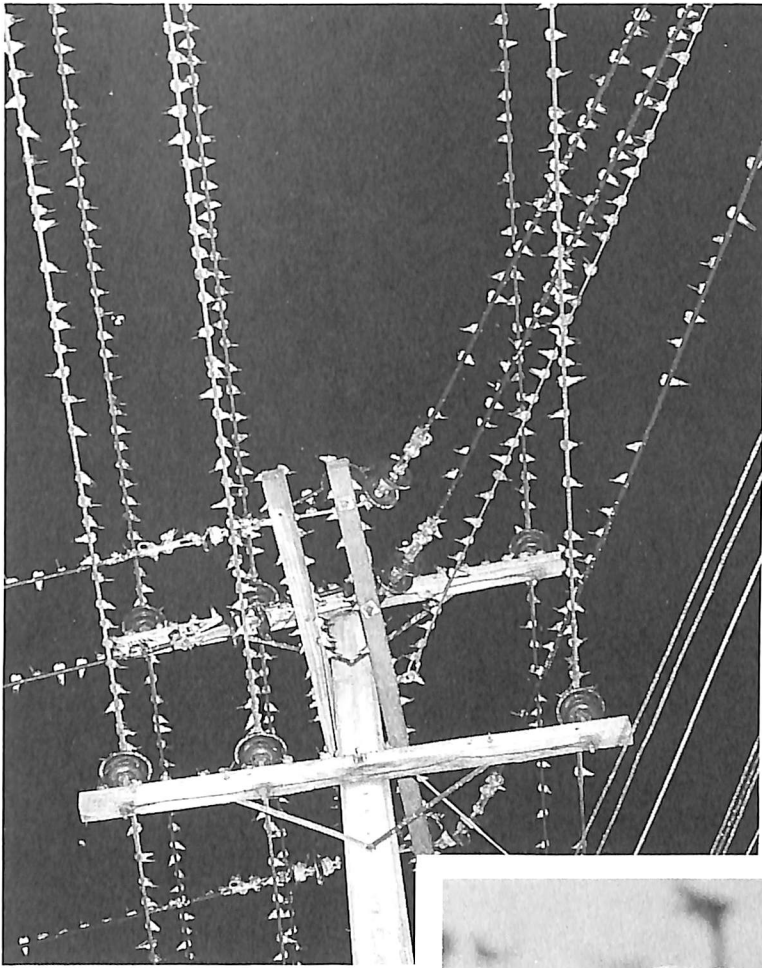


Figure 76. *Upper:* House Swallows at roost in Bangkok (1973). *Lower:* Open-billed stork at Wat Phai Lom, Thailand. (January, 1973). (Both photos by Atsuo Tsuji)

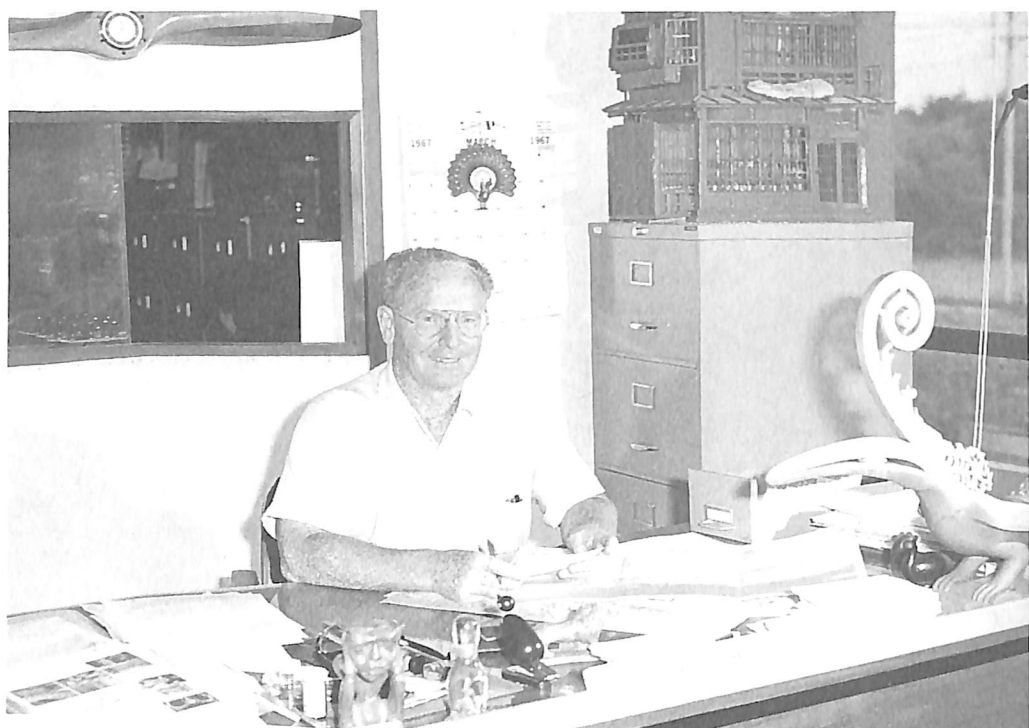


Figure 77. Upper: MAPS office at the Applied Scientific Research Corporation of Thailand (1967). Lower: MAPS staff. Somchit at file, Somtrakul and Pilai at microscopes, Jamrong at typewriter (1967).

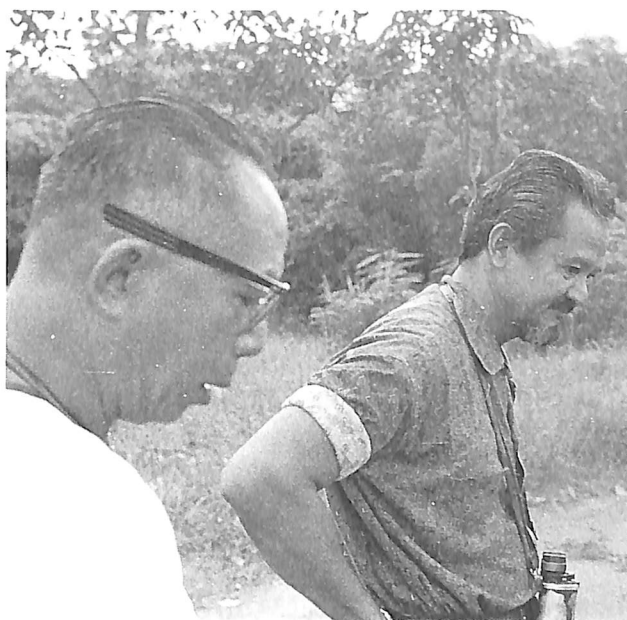


Figure 78. MAPS scientists: Dr. Won Pyong Oh, Korea; Lord Medway, Malaya; Dr. Won and Dr. Nagahisa Kuroda, Japan; Godofredo and Dr. Joe Rabor, Philippines.

Alcasid



Figure 79. *Upper:* MAPS conference at Tunghai University, Taichung, Taiwan. Dr. Won Pyong Oh, Ben King, Elliott, Dr. Paul Alexander, Lucy, Lina Rabor, Dr. Joe Rabor, Lord Medway, Dr. Nagahisa Kuroda, M. Yoshii, and others (1964). *Lower:* MAPS team leaders birding in Taiwan (1964).



Figure 80. *Upper:* Lord Medway and his companions oversee the construction of new quarters at Mile 13, Gombak, Malaya (1966). *Lower:* MAPS conference in Manila, Philippines. 1. Lucy. 2. Sheldon Severinghaus. 3. Mrs. Ocampo. 4. Director Ocampo. 5. Lina Rabor. 6. Mi-za Chum of Korea.



Figure 81. *Upper:* MAPS participants at Manila. 1. Dr. Won Pyong-Oh. 2. Somchit. 3. Dr. Joe Rabor. 4. M. Yoshii. 5. Lord Medway. 6. Col. Chas. W. Cook. *Lower:* 1. Ham Kyu-Whang. 2. Warlato Sanguila. 3. Y. Hasuo. 4. Tsuruhiko Kabaya. 5. Dr. S. Somadikarta. 6. Kitti Thonglongya. 7. McClure.

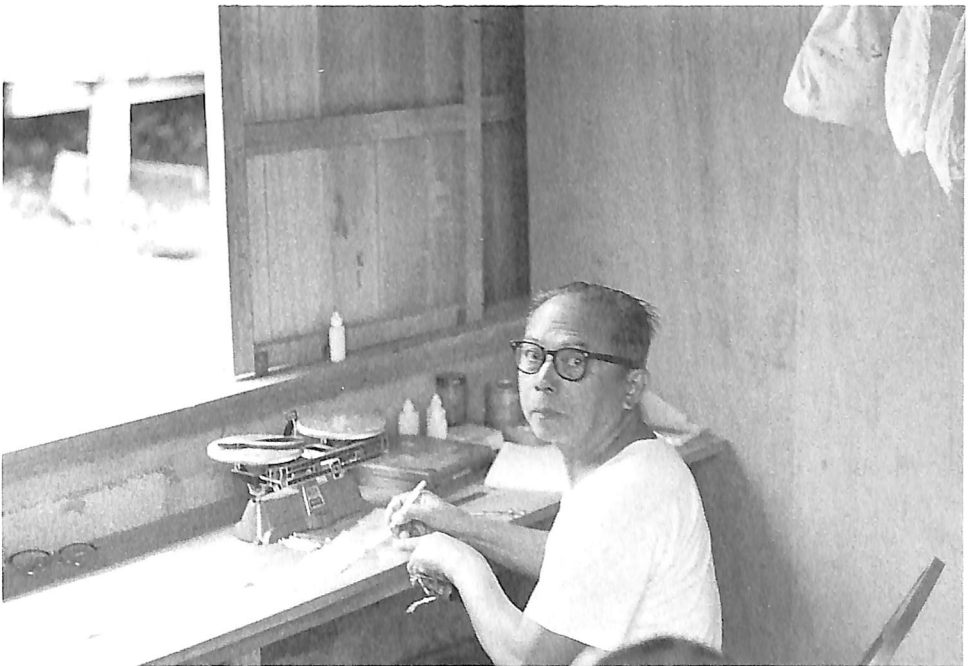
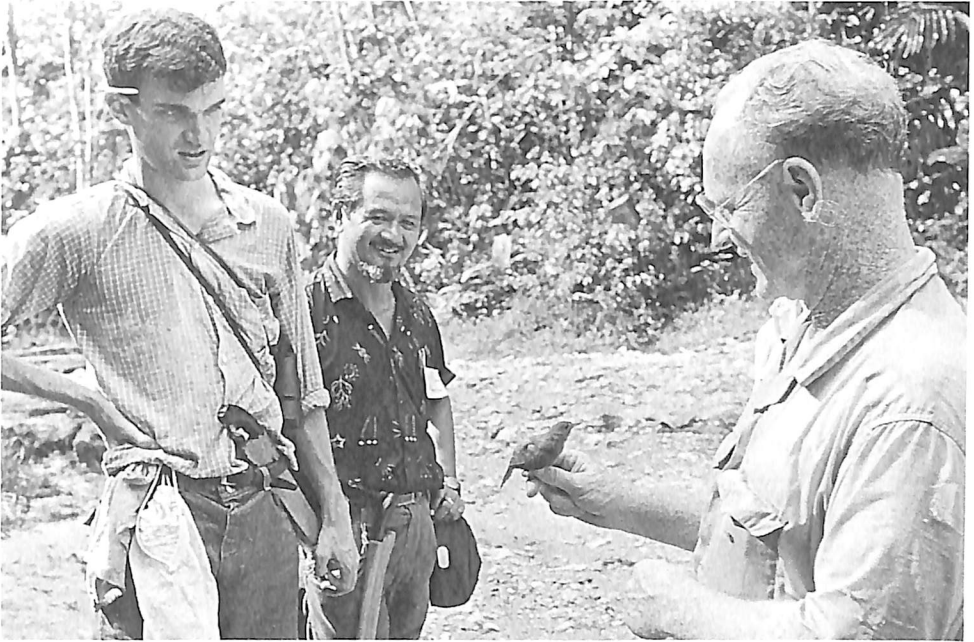


Figure 82. *Upper:* Sheldon Severinghaus and Dr. Joe Rabor enjoy a Green Leafbird in Malaya (1965). *Lower:* Godofredo Alcasid at the banding station on Dalton Pass, Luzon, Philippines (1965).



Figure 83. *Upper:* Lucy and Cam meet Thai friends, Bangkok (March 1972). *Lower:* Lucy, Elliott, and Les, Lucia, and Vail Severinghaus at lunch, Canberra, Australia (August 1974).

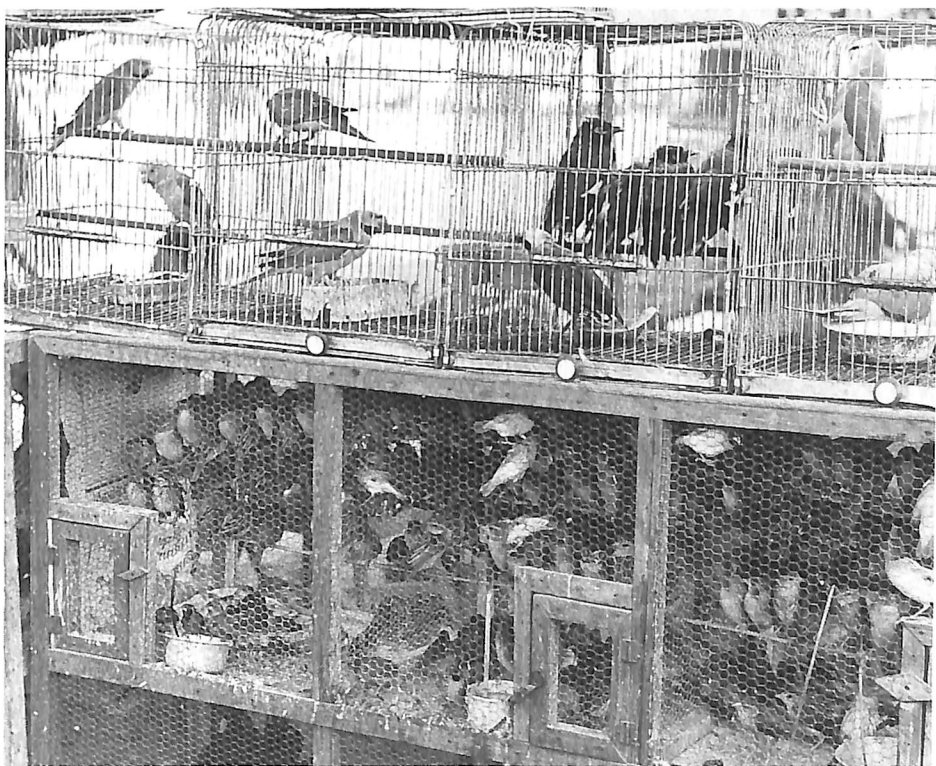


Figure 84. *Upper:* Somtrakul and I survey the Bangkok “Sunday Market” for wildlife (1967). *Lower:* Wild birds for sale at the Bangkok Market (1967).

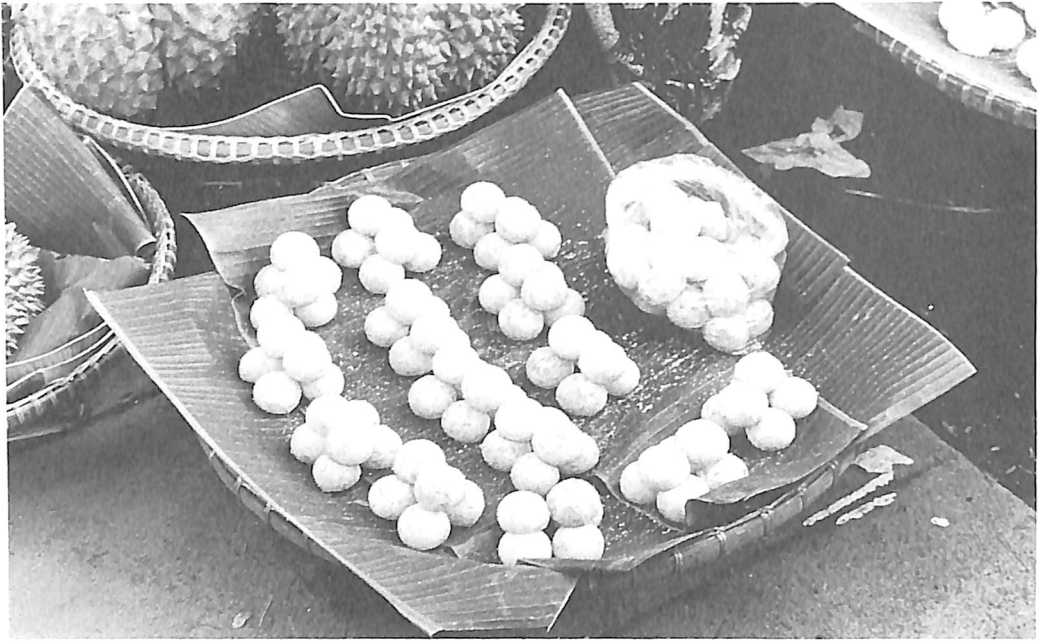


Figure 85. For sale at the Bangkok "Sunday Market" in Thailand (1967). *Upper:* Leathery turtle eggs, durian, etc. *Lower:* Vegetables, dried fish, giant water bugs.

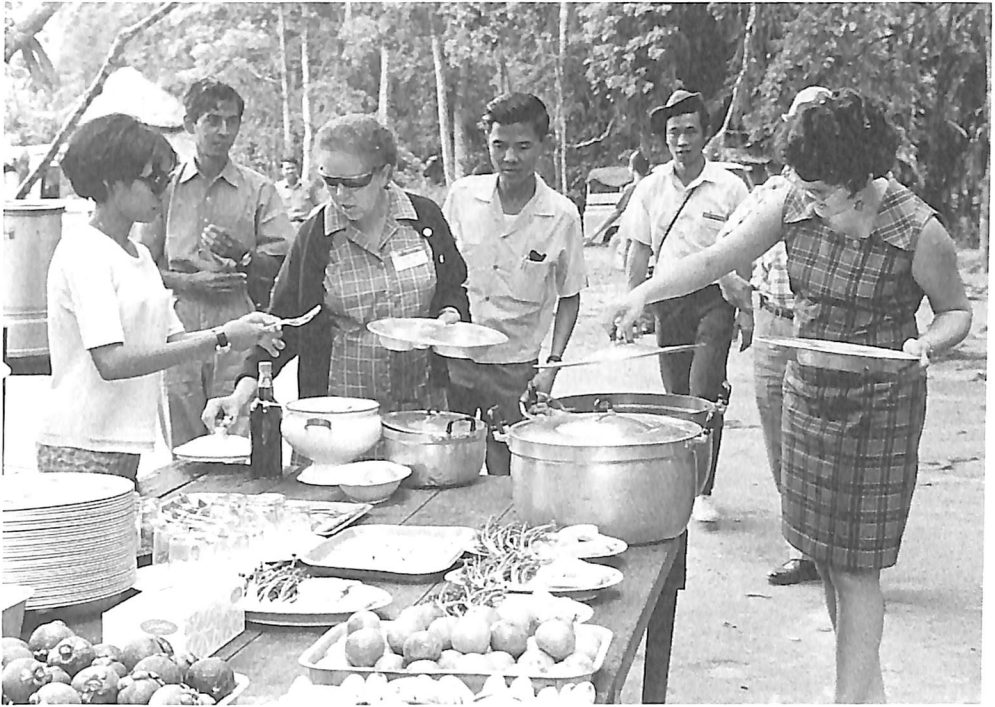


Figure 86. Eatin' and Meetin' at the 1968 MAPS Conference at Khao Yai National Park, Thailand. *Upper:* Somtrakul, Jamshed Panday (India), Lucy, Dr. Prasert Lohavanijaya, Yongyut, Judy Lohavanijaya. *Lower:* Dr. Won, Yoshii, Medway, Huang Wan-tsih (speaking), McClure, Dr. Rabor, Dr. David Wells.



Figure 87. *Upper:* Dr. Boonsong LeKagul pours holy water upon the hands of Chalermpon and Woraphat at their wedding ceremony. *Lower:* Chalermpon and Woraphat Arthayukti wedding photo. (November 1969).

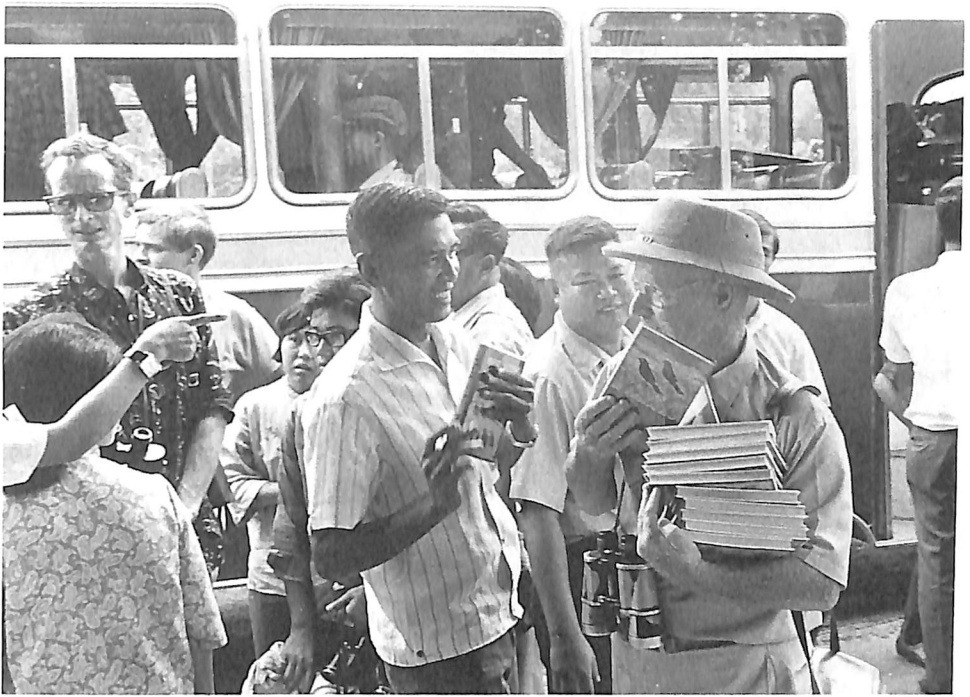


Figure 88. Distributing copies of Dr. Boonsong's first Bird Guide to Thailand, Khao Yai National Park (August 1968). *Upper:* To Somtob Norapuck, with Medway and Kitti in the background. *Lower:* To Hussain bin Othman of Malaya.

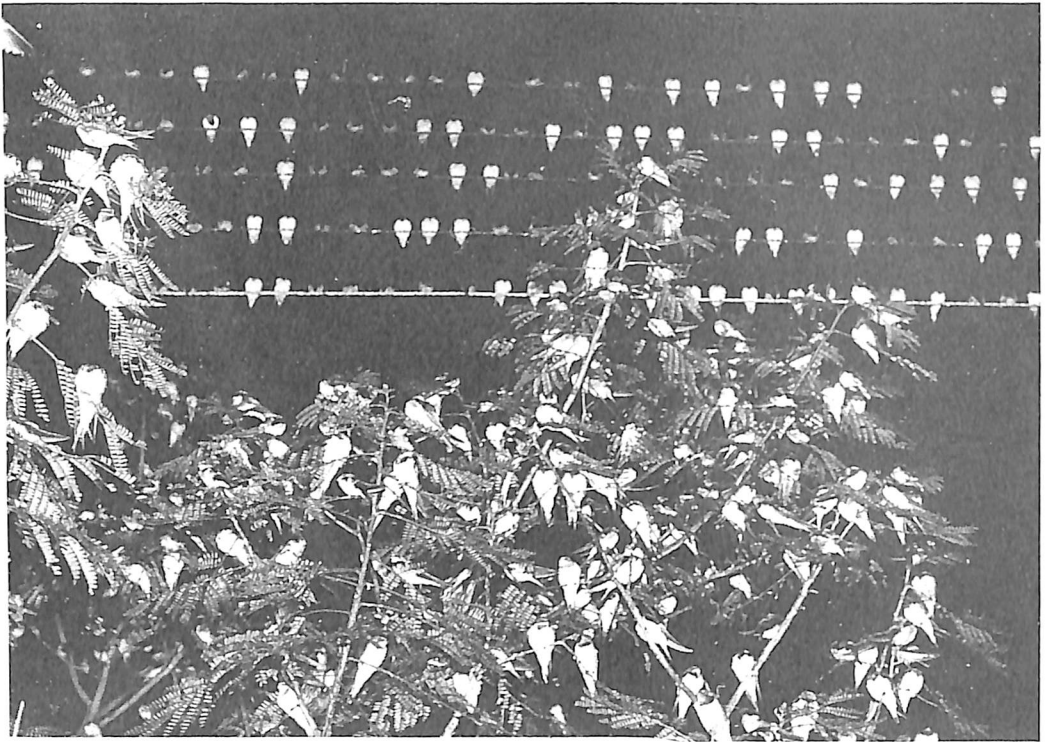


Figure 89. *Upper:* House Swallows (*Hirundo rustica*) wintering in Malaya. *Lower:* Gathorne and Caroline Medway (now Earl and Lady Cranbrook) banding swallows at 0200 from a roost in Malaya (1970).



Figure 90. *Upper:* Urashimotaro meeting at Azumiya in Tokyo: John Masuoka, Shibazaki, Michiko, Henmi, Motojima, Mrs. Azumi, Lucy and McClure (28 September, 1963). *Lower:* MAPS staff at Khao Yai National Park; Pranee, Somtrakul, McClure, Somchit, Wan-Tsih Pilai (1968).



Figure 91. *Upper:* McClure at a jungle camp in Malaya (1960). *Lower:* Ripley, Yamashina, and Salim Ali at conference in Bharatpur, India (1969).

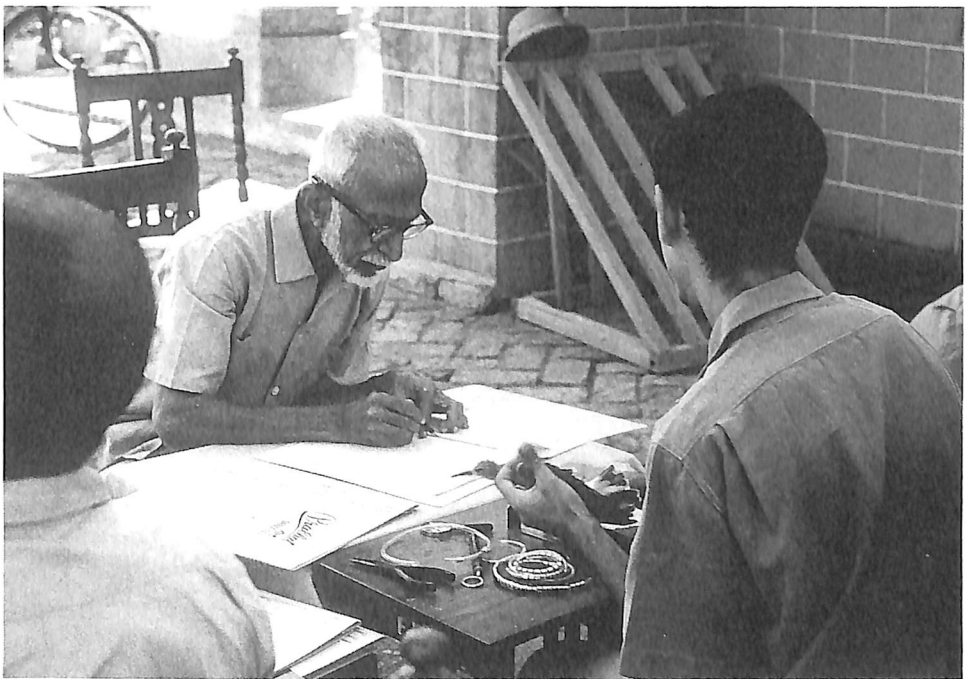
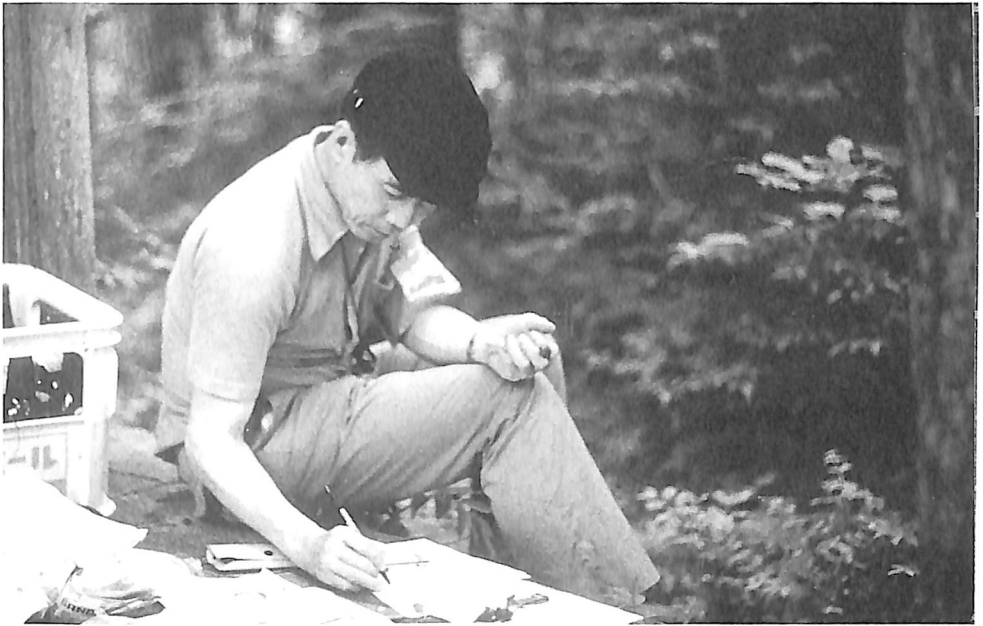


Figure 92. Upper: Masashi Yoshii banding birds in Japan (1972). Lower: Dr. Salim Ali recording banded birds with crew at Bharatpur, India (1972).



Figure 93. *Upper:* The MAPS staff at the ASRCT (1972). *Lower:* Dr. Niphan Ratanaworabhan presents her work with birds to HRH King Bombiphol (March 1977).

be the American with the experience with Eastern Asian birds and I was on the spot. We closed our work at Kuala Lumpur and Lucy and I moved back to Tokyo to the Tachikawa Air Base. And so was born the ungrammatical "Migratory Animal Pathological Survey". Some desk jockey in Washington conceived the name using an adjective instead of a noun, i.e. Pathological instead of Pathology.

By much travel we visited ornithologists in Japan, the Yamashina Institute and Yoshii, of course; Fred Hechtel in Hong Kong; Dr. Paul Alexander at Tunghai University in Taichung, Taiwan; Fred Alcasid at the Philippine National Museum in Manila; Dr. Joe Rabor at Silliman University in Dumaguete, Negros Oriental, Philippines; Kitti Thonglongya at the Applied Scientific Research Corporation of Thailand in Bangkok (the team here organized by Ben King and later taken over by Kitti); Lord Medway and Dr. David Wells at the University of Malaya in Kuala Lumpur; Dr. S. Somadikarta at Bogor Museum in Indonesia; Dr. Salim Ali of the Bombay Natural History Society in India; Dr. Won Pyong Oh of Kyung Hee University in Seoul, Korea; and a few individuals in Viet Nam and Borneo. Through the Army Research and Development offices we gave these scientists grants which they used to put teams of bird banders in the field, at times as many as sixty people. In 1966 we moved our operations to the Applied Scientific Research Corporation in Bangkok where I was attached to the Southeast Asian Treaty Organization, having my offices and staff at ASRCT. This was advantageous as Bangkok was more centrally located in our sphere of action, and in the ebb and flow of bird migration. All of these people working with what would now seem to be very low funding banded more than a million two hundred thousand birds of a thousand species in seven years, collecting thousands of ectoparasite and blood samples. And from these thousands of birds we had 5,586 recoveries or returns. All of this resulted in three volumes; one on ectoparasites, one on avian malaria and blood parasites, and the third, a comprehensive study of the migration routes of the birds of Eastern Asia.

The MAPS program occupied the last twelve years of my professional life and proved to be my most massive and, I think, successful effort. It could not have been completed without the whole hearted participation of each team leader and financial support from the U. S. Army Research and Development Command, which was commanded by interested and sympathetic leaders, especially Col. Chas. W. Cook, who participated in many of its activities.

MAPS developed from efforts at organization in 1963 to a broad international research program during the last half of that decade and a vast amount of information was accrued. My position became that of visiting the various banding parties in the field and in coordinating and stimulating their efforts. Each year's results were published in a comprehensive annual report, many of which probably still rest in laboratories and libraries about the world.

To add to traditions of the program and to enhance enthusiasm among the leaders, we had a MAPS annual conference each year. The first was in

September 1964 at the Hong Kong National University from which we adjourned to the field stations of the Taiwan team at Tunghai University in Taichung. Fred Hechtel did most of the banding in Hong Kong and Dr. Paul Alexander assembled a team of students at Tunghai, later taken over by Sheldon Severinghaus (who received his PhD for his work with the Mikado Pheasant, a rare pheasant in Taiwan). The second was in November, 1965 in Malaya with Lord Medway's team from the University of Malaya, held at his field station at Mile 17 on the Gombak watershed above Kuala Lumpur. The third in August, 1966 at Tokyo, hosted by Dr. Yamashina and Yoshii and in conjunction with a conference of the International Committee for Bird Protection (ICBP). There we visited the Shinhama Waterfowl Refuge and coastal areas. Fourth was in October, 1967 at Dalton Pass and in Baguio, Luzon, Philippines, hosted by Godofredo Alcasid.

A conference that was highlighted by night netting on mountain tops and experiencing a severe typhoon while in Baguio. The fifth was at the ASRCT in Bangkok in August, 1968, where we were hosted by Thai government officials and from which we retired to three days of tramping in my beloved Khao Yai National Park 140 miles northeast of the city. Ben King had organized the Thai studies, later taken over by Kitti Thonglongya and his very successful team. The sixth and last conference was a spectacular one in conjunction with the 10th general assembly of the Natural Resources International Union for Conservation of Nature (IUCN) meeting at New Delhi, India, from which we drove to the Bharatpur Bird Sanctuary, Rajasthan, former hunting grounds of the Rajah of Rahasthani, now a wildlife refuge. Here with Dr. Dillon Ripley chairing an ICBP conference and Dr. Salim Ali the hosting of MAPS, we discussed many local and international problems in wildlife conservation and viewed wonderful birds and mammals.

It should be obvious from this brief list that numerous anecdotes and stories arose from our deeds and misdeeds. Rather than elaborate on these (which could be a book in itself) the following panel of pictures will highlight some of the activities.

accompanying

We were astounded at the number of recoveries reported from the countries to which and through which the birds travelled. Reports in a babel of languages! None from China or Burma which were closed at the time, but many from Japan, Taiwan, and the Philippines. The address on our rings was "Box 3443 Hong Kong" to which we thought anyone could write without fear, except the poor Chinese. Our data was eschewed to the east by this lack of information from China, for almost all of the major flyways passed through that great country.

The reasons why people did or did not write to P.O. Box 3443 were manifold and were influenced by their cultures and outlooks. The Japanese reported rings because they were highly literate and understood why birds would be banded. Birds apprehended in Siberia were reported to Moscow and the information forwarded on to me. The Taiwanese responded with interest

and curiosity. The Filipino wrote to us and wanted a reward. The Thai did not write, but bought a lottery ticket with the band number on it, hoping it would bring good luck.

I could not travel to China or Russian territories because I was on the Communist hit list. I had been on this list since handbills were distributed in Tokyo in 1950 describing our work with birds and distorting it to be a study in biological warfare. We were supposed to be inoculating birds with viruses and freeing them to take infection to China and other lands. But this didn't deter M. I. Lebedeva and other scientists of the Russian Bureau of Bird Banding from forwarding their information to us.

Numerous interesting and amusing incidents happened during such an interwoven international enterprise, some of which have already been related and many more have been overlooked.

In the American sophisticated system of banding, the ringer never gets to see the fascinating letters that go with the recovered rings. Or maybe the American hunter and occasional ring finder is so blasé that he just sends the ring to the Fish and Wildlife Service or information about it without adornment. All the ringer gets is a callous, impersonal report card or sheet listing the information. I used to add a little romance to this by immediately writing to the recoverer for more information. This sometimes led to some interesting correspondence. In Asia I did the same, a letter in response to each report.

When the Migratory Animals Pathology Survey began in 1963, we did not anticipate the flood of letters that we would eventually receive - letters written in fifteen languages, from as many nationalities and ethnic groups. As the months went by, I was fascinated by the contents of these letters. As each letter with its gay array of stamps or its distinctive penmanship appeared before me, I anticipated not only its scientific potential to hold valuable information, but also viewed each as a tiny window of human interest and endeavor.

The Filipinos were the most articulate of the nationalities that recovered our rings. They are a fearless, inquisitive, and acquisitive lot and plied us with numerous requests and supplications.

In our headlong rush through this materialistic world, one of the qualities of life that we are losing is the ability to experience and respond wholeheartedly and in wonder to the exciting and unusual moments of life. Hundreds of the letters from the Philippines told of the ambitions and hopes of the people, of their needs and deeds, and above all there was a poignant humanness through them. This was especially true since these are a proud but effervescent people motivated by devotion to God and their families and encircled by the harsh restrictions of an overpopulated land.

I have selected thirteen letters which tell as many stories. There are hundreds more like these. They asked me to play Santa Claus to their children, they had heard about others who had recovered rings and wanted to join the club, they prayed to God and slaughtered His creatures in same breath. The letters were, in short, tiny dramas of the cross section of Filipino life. Thirteen letters are only a fascinating taste.

I know that my readers will respond differently to these letters, some

seeing their pathos and humor, others reflecting upon the sad fate of migrant birds that reach these seven thousand islands. I did not make them up. They are reproduced here as they were originally written. They were solicited only in that each ring had a serial number and the words "Write P.O. Box 3443, Hong Kong B.C.C." Many are typewritten, even by the poor farmer who could not own a typewriter, for throughout Asia there are, in the villages, streetside secretaries who will type a letter for one. This fee and the hardship of devoting money for a stamp made many of the letters even more meaningful. Many letters were written by school children who had learned English and who prepared the letters for other members of the family less conversant in English.

First, a fairly straight-forward report about an Emerald Dove (*Chalcophaps indica*) by a farmer who decorated his letter with an explanatory sketch.

2 Mar 1972

To whom it may Concern:
Sir or madam,

I am very glad to write you a short line because of this having'ly secret of bird, a bird that has a secret ring on his right feet, the address of the ring is P.O. Box 3443 060-28794 Hong kong B.C.C. So I write you directly to this address to report this bird and what does it matter

Sir, I was only a farmer that have the age of (25) twenty five years old. I live on a small barrio of Umingan, Pangasinan, P.I. I catch this bird with my air gun. It is yet alive before I mailed this letter. I don't know if this bird will die or not. The color of this bird is green and has a small white on his head and black. His bill is red, and his name of us on the Philippine is wild dove, Here I explain with the drawing at back.

Name O.J.
(sex) Married
Barrio
Town Umingan
Province Pangasinan
Philippine Island

The dove had been ringed 17 months before at Dalton Pass, 20 miles north of his village. These doves do wander, but no migration patterns have yet developed from the study.

Birds were recovered under strange conditions.

San Jose Ext. Dumaguete City
Negros Oriental
Philippines
March 28, 1965

Dear Friends,

I am sending you this letter because of a certain reason. I found your bird. But before talking about it, I'll introduce myself to you.

I am a thirteen year young Filipino born on January 18, 1952 in the town of Zamboanguita, Negros Oriental, Philippines. I finished my primary education in one of the primary schools in my hometown. Later, we moved to Dumaguete City, the capital city of Negros Oriental and studied there in the "East Visayan School of Arts and Trades". Well I told you some things about myself. Now let's go back to the bird.

It was Sunday, March 28 at 8:00 in the morning. It was a beautiful sunny day that most of the people went to take a bath. We enjoyed running and playing on the sand. We were also swimming in the blue sea. Just then the sky grew dark and the blue sea became brown. Other people went home. After a while there were pieces of wood and leaves floating. "Perhaps flood coming from the rivers," I wondered. Then the waves of the sea became larger. At that moment I realized that there was a flood coming from Apo island, a little island just a distance from Negros Island. I looked farther and farther until I saw a large broken log. There was something standing on it. I tried to reach for the log and I found out that the thing standing on it was a living thing, a very weak bird. Its wings hung to its legs. I brought it home and gave it some food but it refused to eat. I inspected carefully and I found out that it had a wound on its breast. I also found a ring on one of the legs bearing these words:

Write P.O. Box 3443
070-10401
Hong Kong B.C.C.

I didn't waste time. I wrote to you right away. Then the next morning I woke up early to see the bird, but I found it dead. Maybe because of the pain and hunger. That bird had done its great work. It is like a hero. The picture of that bird is still in my mind and I'll never forget it. I think I told you the whole story now.

If you can still remember, please tell me all about the bird before they were sent.

May God bless you and me and give you good health.

Your friend,

This was another dove, the Javanese Turtle Dove (*Streptopelia bitorquata*) which had been ringed only three months before about 35 miles south in Siaton, Negros Oriental.

He was terrified when he shot the bird, but not too terrified to write the following:

Mr. A.Z.
October 11, 1972
Bacolod City

P. O. Box 3443
060-18869
Honk Kong, B.C.C.

Sir:

This is my first time, that I shot a bird with a ring through-out my life. On the first place when we go hunting, people saying that the place is so enchanted that one hunter by the name of Sandro shot a big bird and die on the spot, likewise to Miguel this incident was also happened.

These humors are knowned by every person living in that barrio. So, When I shot that bird "Saling" (Color-black, no feather round the eyes, calig communication, ing, ing, ing, black-feet and beak)

I recall these humors. My whole body trembled waiting that I will die, but we stayed on that place for three days. We went home and nothing happended to me. I examined the ring, I saw, "Write P.O. Box 3443". Commanding to to write, So I wrote this letter thinking that it will give me a charm.

Very respectfully yours,
AZ

This, a Coletto (*Sarcops calvus*), is a large bizarre Starling which is indigenous to the Philippines and non-migratory. This one had been ringed in May, 1967 a few miles from where it was shot. It had been captured once, a month after it was banded, and the trapper had released it after recording the ring, but this time it was not so lucky. It had survived 65 months since being ringed.

We even got letters from young secretaries.

Republic of the Philippines
Municipality of Italyat
Province of Batanes

March 13, 1970

To my unknown Friend:

I'm glad to let you know that I caught a bird wearing a ring wherein I got your address. But at first I was reluctant to write for fear that You'll not answer it. I'm still keeping your bird's ring.

If you want to know more about me, I'm a Filipina Girl, 22 yrs. old and at present the Mayor's Secretary in the Municipality of Itlayat. I'm a Roman Catholic. I'm living with my parents and I have only one sister and no brother. My sister is 27 yrs. old and married to an American and presently residing at Florida, Miami. My hobbies

are pen-pal writing, reading & collecting dolls.

How about you? I would be very glad if you'll write m so that I'll know about you. Send me also a photo of yours and I will send mine next mail.

This is all for now & hoping for your answer.

Your pen-pal
V.R.

No mention of the bird, but often the ring number was included in the address on the envelope. She failed to tell us how she got the bird, but the usual Philippine use of the English word "caught" meant "shot". Black-crowned (*Nycticorax nycticorax*) are not easily caught by our definition. This was a yearling from a colony in Tokyo, having stopped at this tiny island in the seas north of the Philippines (Batanes Province) on its way home for its first breeding season.

Oddly enough a biologically minded collector got this one.

Boac, Marinduque 201-E
Philippines April 26, 1972

P.O. Box 3443
050-28508
Hongkong B.C.C.

Dear Sirs:

This is to inform you that last April 24 Monday I went to a small interior barrio of Tugos, Boac, Marinduque province, southern Luzon, around 40 to 60 miles south of Manila to discover that a bird bearing the above address was seen perching a tree near one of the clustered houses. A ring was taken from the feet of the bird which was shot by a small boy with a slingshot using a small stone pebble. The bird was said to look like a Kingfisher which is however foreign to them. The bird was shot April 21 Friday noon and was found the following day dead Saturday early in the morning April 22.

I am a Naturalist collecting all kinds of biological items land marine and freshwater reptiles, amphibians, cicadas, butterflies, moths, katydids, locusts, scorpions, spiders, beetles, earwigs, leaf insects, bugs, fleas, lice, ticks, dragonflies, damsels and all other insects as well as leeches, marine starfishes, and many others. Also all kinds of snakes, lizards, turtles, frogs, (hyla and rana) typhlops etc. I am a shell dealer for over 12 years and have started to offer all biological items (preserved) for two years now. Birds is the only one I have not taken in my business though I have a number of stuff birds as a collection.

The man who gave me the above information about the bird bearing the above address is Faustino Isole of Tugos, Boac, Marinduque who told me about the find. I only came to the place two days after the bird was killed. I have read similar incidents of birds found in some part of the Philippines loosed from some museums and zoos in the United States purposely to find out how these birds migrate for scientific study.

I am reporting the matter to you for the address inscribed in the ring has the note:

Write P.O. Box 3443
050-28508
Hongkong B.C.C.

Sincerely Yours
L.R.

It was a White-collared Kingfisher (*Halcyon chloris*) which had been ringed nearby on Marindugue Island about 28 months before. These are coastal Kingfishers that wander widely and cross from island to island.

People are curious about the actions of others as this young lady tells.

Lopez Sugar Central
Fabrica, Negros Occ.
Philippines
July 13, 1970

Dear Someone:

Here's a friend who wrote you a letter informing you about a strange incident that happened here in our place in the Philippines. At first I was so reluctant to write in this mailbox because I don't know whom to write on, but I was encouraged by my auntie that someone would dare to write me back in case this all come true.

Well, to begin with the story, somebody in our place go hunting. He shot a bird with an aluminum ring on one of the birds' leg. He was so afraid that the bird was owned by a strange person he let the bird flew but took the ring in the birds' leg and throw it near my auntie's house. So curious about that things my aunt picked that ringbird and brought it to me to be read.

In front of that ring lies a number like this: 040-17983.

Inside I read: Write
Box 3443
Hongkong

So therefore we concluded that somebody in your place owned that kind of bird and brought it here in the Philippines (if I were not mistaken).

Right now if this is true I'm glad to know somebody in this place. Well, before I forgot let me introduced to you my name. I am L.C., a pure Filipina, with a fair complexion. Standing 5'4" bare-footed, weighing 100 lbs. Maybe that will give you a hence how your writer look like.

Here I drop, hoping to know the result of this curiosity.

Regards to everybody.

A New friend
L.C.

The bird was a Brown Shrike (*Lanius cristatus*) more than four years old. These nest somewhere in northern China, no word has come to us where, and each fall they move across the straits from China to the southern tip of Taiwan. They are harvested for food by the thousands there before they can move on to the Philippines where there is more slaughter. Our informant did not tell us when the bird was shot, but it must have been several months before she wrote the letter since no shrikes remain at these latitudes after April.

The capture in Cagayan, Philippines of a young Cattle Egret (*Bubulcus ibis*) from a colony in Taiwan is told in the following:

Luchon, Abulug, Cag.
Oct. 17, 1966

Dear Brother,

I am glad to inform you that I am the lucky man who caught your favorite pet "the white heron" which had travelled a long way from here to bind us together by knowing you through letters.

Brother, maybe this is a luck because before the night of catching the bird I had had a very nice dream. I dreamed that I had been flying high above the cloud and there I met thousands of airplane. One of this airplane came towards me and I caught it by the tail and then wake up. I found out that it was only a dream.

Brother in the morning I went to the field to pasture my only carabao. There I saw many "white heron" near it. When I come nearer the birds flew away. But one tried to fly, but it could not. So I rushed up to see what happen. There I found out that it was tied up by the trap of small boys. When I removed the string I found out that on the foot theres the ring which says "Write" and its address. So I even shouted with joy. For at last I had found a friend from abroad.

Brother I'm not closing with thought that I return you will tell or relate the story why and what cause you to do this. And what will be the reward of one who could catch one of your pet.

Your New Brother
T.P.

People of S.E. Asia are fun loving and this was an occasion for a party.

Bato, Camarines Sur
Philippines
January 8, 1969

P.O. Box 3443
Hong Kong B.C.C.
100-38606

Sir:

This is to send you the news about the heron which was hunted by me sometime in January 1, 1969 in Bato Lake, this Municipality in the early morning of that date at around 8:00 o'clock.

I was alone engaged in my pastime hunting wild birds especially this season when I happened to hit with my shot gun No. 6935, caliber 12 g.a. and under license no. 85361 this rare species in our soil. Thinking that the bird was still alive, I hit it against a tree-trunk and later on discovered that a ring is fastened in one of its legs bearing an inscription, namely:

WRITE P.O. BOX 3443
Hong Kong B.C.C.
100-63606

This inscription coming from a far-off country interest me so much that I immediately informed the Municipal Mayor, Atty. Ernesto Tino of this municipality and conveyed to him this incident. He advised me to write directed to the address indicated in the ring hence this letter.

Surprised of this feat and luck of having hunted a unique bird which to me seems to come from another country, I gathered my firends to cause for an informal celebration in my residence in the form of eating, drinking etc. It was really a nice gathering all for the cause of the "bird" with a "ring". All of my friends were made to guess what the gift or reward would be for this lucky hunter, who incidentally happens to be the writer and sender of this letter. Just what would happen to this letter, I expect something wonderful will provide us a little bit of elation if perchance our longing and expectation would be rewarded at least.

In this big gap which keeps us apart geographically, perhaps this bird "heron" was intended to convey a message of goodwill especially so that this "messenger" across the sea came to our shores on the very first day of the new year 1969.

I, therefore, would be expecting so much from your reply to bridge our gap between loving countries Hong Kong and the Philippines.

Truly yours,
N.J.

The "messenger" that got eaten was a Little Egret (*Egretta garzetta*) only six months old which had been ringed as a nestling at a colony in central Taiwan.

Another Coleto was reported by this plaintive letter from a college student. Mindanao is strife ridden with conflicts between the Christians and the Muslims. The Mindanao State University had been under siege by Muslims at the time that she wrote her letter and it was more than a year before we located the bird's records. Cotabato has recently (August 1976) been in the news because of destruction from a tidal wave caused by earthquakes.

Miss F.M.
Cotobato City
May 22, 72

Dear Sir

Above all things...greetings to you in the name of our Lord Jesus. And I hope that as this letter of mine arrives you...You're in the best of health & of good cheer.

I am just but a mere college student this coming opening of this school year 1972, who has been striving hard so I can continue my study this opening & fortunately...I should say It is heaven for me...Because you know I have been praying to God that I could continue my study but I'm wondering on how to continue my study, parents are very poor and we are 10 in all in the family. But when I saw your bird having a tag I say to myself..Oh God!..how wonderful...is thy creature. Really I need somebody to help me that would do something for my brighter future and I hope and I'm sure, your kind and warm hearted cooperation and consideration on this letter would led me to success, someday. I thank you And may the Lord will blessed you more.

Very Respectfully,
(Miss) F.M.

Central Sub-colony
Iwahig Prison and Penal Farm
Palawan, Philippines

9 June 1975

Gentlemen/Mesdames:

This is to inform you that I accidentally caught a wild bird on 6 June 1975 at about 2:00 o'clock in the afternoon at Central Sub-colony, Iwahig Prison and Penal Farm, Palawan, Philippines, with a tag or ring at its leg bearing the following inscription: Write P.O. Box 3443, 050-30136, Hong Kong, B.C.C.

For your information I am an inmate of said Penal Farm, with a family of two kids and a wife who were left behind living in misery without anybody to support them and which sometimes I am doing my level best just to help them.

In this place we are trapping wild birds during spare time and sell our catch just to earn a little money. By good luck, one of my traps called (Silo) in our language caught said bird with a tag or ring which is still in my possession.

However in view of the peculiarity I am curious to know what it is all about. Please let me know what it means and I am looking forward to receive a reply from that address.

Enclosed is the ring or tag with a feather of the bird for your reference.

Please do not hesitate to answer this letter. Thank you and God Bless you.

Very respectfully yours,

G.M.S.

How do you as an environmentalist answer a person who is in prison for some unknown crime and who is permitted to capture birds for sale for food for pocket money? Not only that, but because of lack of response from the Indian in Malaya who had taken over MAPS records, it was two years before

I learned about the bird. So my answer to the young man was:

"The bird that you trapped was a Painted Snipe. It had been ringed near Iwahig on 20 May 1970, so it was just past five years when you got it. This was an adult when ringed so we do not know exactly how old it was, but that it was at least six years. In our study of bird migration in the tropics we have also learned that such birds live a long time. Apparently life is easier for birds in the warm climate and they live longer. Painted Snipes migrate north as far as Japan and Siberia to nest, but also some of them remain in the Philippines to nest.

I hope that you have rejoined your family and that things are going well with you."

There was no further communication, but I hope that he received the letter. I suspect that the warden wrote the original letter for him.

Aicate, Nueva Vizcaya
Philippines
22 June 1975

To whom this may concern:

Perhaps you will be surprised upon receiving this letter from Philippines. And was indeed grateful to know about you. I wrote you for the reason of having your address that came from a bird. It is a metal ring shaped that the address was written that was able to get from the leg of the bird. 070-07567. And so we're very eager to know about this. We were able to get the address last May, 1970 and suddenly the address was misplaced but fortunately my brother saw it this morning and I immediately write you.

For your information I am Constanao, a 21 year old, single, commerce graduate major in accounting. I have four brothers and three sisters where as follows: (Eldest to youngest) Renato, Purificacion, Rodrigo, Rosita, Danilo, Antonio or Junior, and Cynthia. I am the second to the youngest. Three of them were married, the first and second and the fourth ones. My father, Antonio, was a farmer while my mother, Natividad, was a housekeeper. We were not a well to do family; that's why we only live as same as the other citizens of the Philippines.

To be an ambitious human is just possible, that is why I am one. I want to reach other places here on earth, but in my case it was so impossible. I am very fond of letter writing, singing and outing.

As of now I am searching for an office job in order to help my parents as well as my brothers and sisters. I like to meet different kind of people whether in kind of race and citizenship. I speak more in Tagalog than any dialect.

Well, perhaps it is enough to introduce myself and I am very much willing to know more about you there in Hong Kong. I just want to know the reason why there is an address came from that bird that tells to write you there. And now, here I am verifying the metal ring shaped address that was able to get from the leg of a bird.

Till here and I am very much happy to have a communication there in Hong Kong. God bless you!!!

C.N.J.

My answer to her which came two years later because of confusion in numbers and recording, was as follows.

"The bird that you found or shot in 1970 was a Cinnamon Bittern which had been ringed at Dalton Pass on 6 December 1969. Therefore it had only been six months since it had been ringed. Biologists from the Philippine National Museum have a biological station at Dalton Pass and they were then involved in an international study of bird migration. They were marking birds with Hong Kong rings. We found from the study that these bitterns remain in Luzon, but that they fly to the north or south each year passing over the mountains such as those at Dalton Pass. This flight seems to be related to the rice growing seasons. These birds live on insects and small creatures found in the flooded rice fields since they are marsh birds. They do not in any way damage the rice and are very beneficial to the farmers."

The next man was very original.

San Jose City A-625
Philippines
August 28, 1972

P.O. Box 3443
060-29676
Hong Kong B.C.C.

To whom it may concern:

Whoever you may be, I am sure that you own the bird that I incidentally caught alive because around its foot, there is a silver ring engraved with your address. If your place could be reached by bus, I would have returned it by this time, but Hongkong is far from the Philippines, thus I have no other alternative to inform you its whereabouts.

If the bird was intentionally set free for some reasons, I wish to inform your honor that I will be very willing to cooperate in realizing the purpose in doing such, and if it was lost and luckily reached our beloved country, please advise me how to return it to you. However, I doubt it if will stay alive longer in a cage but I will take good care of it.

When I noticed the ring around its foot, I really was surprised for this is my first time to catch such a privately owned bird inside a forest where hunting is tolerated by our government.

My 7-year old brother advised me to return it by mail, but I told him that the Bureau of Customs prohibits birds inside an envelope.

I asked the permission of my mother to sell our house and lot for me to raise the amount in going to Hong Kong, but my mother ran after me and gave me a dozen or two son-of-a-bits expressions.

It's really funny that I came to recall the poem that runs this way:

I shot an arrow into the air
 It fell to earth, I knew not where,
 For so swiftly it flew, the sight
 Could not follow it in its flight.

I breathed a song into the air,
 It fell to earth, I knew not where,
 For who has sight, so keen and strong,
 That it can follow the flight of song?

Long, long afterward, in an oak,
 I found the arrow still unbroke,
 And the song, from beginning to end,
 I found again in the heart of a friend.

Now I can say:

Long long afterward in a forest,
 I found the bird still at rest,
 And the ring, engraved with an address,
 Is still there, not yet erased.

Pardon me for making my letter a bit informal because I believe that when friends meet, there must be some cracks, or else the meeting will be dry. This letter came from your friend in the Philippines and it carries goodwill to you and to your countrymen.

Hanagang sa mule. (Till the next time) I naasahan hong tutugunin ninijo ang ahing leham. (I hope for a reply). I dinadalengin ha ang patuloy na pagunlod ng injong bousa. (I pray that your nation be prosperous and progressive) Pagpalain nama kaip ng Maykapal. (May God bless you)

Your friend,
 R.T.

And the bird was a Slaty-breasted Rail (*Rallus striatus*) which had been ringed ten months before at Dalton Pass 25 miles north. Several species of rails live in the Philippines and move north and south with the seasons, but not leaving the islands. *Striatus* appears to follow rice cultivation north and south since it is an insect feeder. They will also be found along streams in the cut-over forests.

The mountain peoples of Luzon are known as the Igorots. They cultivate the hillside by terracing them, and they obtain much of their proteins by hunting and trapping. The remarkable young man whose first letter follows has since become chief of police of his small village. We have had several letters from him as he has found rings among the hunters of his area. This bird that he reports was a Cattle Egret (*Bubulcus ibis*) which had been ringed as a nestling in Taiwan in 1966. So it was eight years old and had managed to avoid Filipino hunters for as many winters.

Imugan, Santa Fe
Nueva Vizcaya
November 11, 1974

100-17217

Dear Sir:

Prior I proceed my letter may I greet you first say good morning or good afternoon.

I send this short note ain of the bird, because it is already came here in the Philippines like here in my place of Barrio Imugan, Santa Fe, Nueva Vizcaya. When I go up to the forest I see a died bird hanging on the tree. When I see the big bird died, I claimed the tree in I get the bird died after I can't get, I see the big ring and their legs. So cant writing you. Sir please excuse me because don't know how speak English because I am a cultural-minorities or Igorots or native peoples So excuse me. THATS ALL and God Bless you always and merry Christmas to you all.

Tony Tindaan

Tony and I have corresponded these past 15 years. Here is his important letter of August, 1986.

Malico, Santa Fe, Nueva Vizcaya
August 18, 1986

Dear Elliott,

Prior I proceed my humble letter lets me first greet you and the name of our Lord Jesus Christ Savior. Well, I have been a long time that I didn't sent a letter because I didn't find some rings of birds, so I didn't sent a letter since of April 16, 1977 that is end or last I communicated. The people in Imugan and also here in Malico are now honest to shot or sling the birds, because I was advice them. And since December, 9, 1974 that was the first letter that I received to you, your office before is Migratory Animal Pathological Survey in Hong Kong B.C.C. The next letter in Jan. 27, 1975 same office P.O. Box 3443 Hong Kong B.C.C., the next September 19, 1975 that was the last you communicated that you moved to California U.S.A. in May 12, 1976. You are now in California U.S.A. and the last that I was received April 16, 1979, maybe you are surprise that I know all these because I placed all your letters since the beginning of the year Dec. 9, 1974 up to these year of 1986.

Lastly I have moved in Barangay (Barrio) Malico, Santa Fe, Nueva Vizcaya, with distance of 15 kilometers to Barangay (Barrio) Imugan, because I now a Barangay (Barrio) Captain of this Barangay Malico since of June 17, 1982 up to this time, but unfortunately that a Barangay Captain is very hard works because you meet all the problems of the people, especially sickness, fighting one another. You just amicable settlement to one another. But the most problems here in Barrio Malico are sickness. So I am calling your help to this Barangay, please help me any kinds of source or funds that you give or help these enocent people, because we are all cultural minorities. The population here in Malico more than four hundred peoples, so we need your help.

I reminded to you that I was marriage since Dec. 9, 1977. I have a one boy his name is Elliott Tindaan, same in your name because you are the first time that I wrote a letter. Thank you and God Bless you in your family circle.

Please reply. Sir, my mistake is under your correction.

Your Farly Friend,

Tony Tindaan
Barangay Captain
Malico, Sta. Fe, Nueva Viz.
1509. (Philippines)

Elliott Tindaan was born in 1984, of Viola and Tony Tindaan, and they named him after me as you learned in the above letter. As godfather I have occasionally sent him gifts and Tony and I exchange letters once or twice a year. Cynics would say that Tony had so named his son knowing that he would receive gifts. I prefer to believe otherwise and from earlier letters know of Tony's interest in nature and in people. In his letters he often referred to himself and to his neighbors as "minorities" in a political and ethnological sense that suggested social discrimination. Being of Igorot extraction, this may be so.

In July 1990 a great earthquake struck Luzon, epicentered in the region of Baguio which was severely damaged and the well built tourist hotel destroyed with considerable loss of life. I was concerned about the Tindaans since this was within their state of Nueva Vizcaya. Here is Tony's letter.

Imugan, Santa Fe
Nueva Vizcaya
Aug. 8, 1990

Dear Elliott and Lucy:

Prior we proceed let we greet you and the name of our Lord Jesus Christ, Savior. Hello! How are you? How is your life going on? Hoping that you are and a good health in your family circle. We are here are very serious or lonely (isolated) aim (result) of earthquake victims because here in Barangay Imugan are mostly victims of earthquake. Especially those houses, the kaingins (farms, plots) those planted comotes (a root plant), gingers, and so forth. They are destroyed because all mountains here in Imugan are down in the river and also those roads was landslide down in the river, especially those houses are crack down in the earth they are destroyed, and our house was down in the earth, it was destroyed as a result of the earthquake (a picture of utter destruction).

So we are very lonely (I think that he means destitute). My wife is crying and also our son Elliott is crying because our house totally destroyed. This area that I put my house is very dangerous, so we plan to find a area to transfer my house. All of the people here in Imugan are homeless. Maybe you are read in the newspaper that one of this province of Nueva Vizcaya is the victim of the earthquake. These are the earthquake victims: 1. Nueva Vizcaya, 2. Baguio City, 3. Cabanatuan, 4. La Union. Here in Barangay Imuga two died persons, in Barangay Unib two died, also this Unib is near to Imugan. The people here are very busy to make their individual houses.

Fortunately the another countries donated the reliefs or rations like U.S.A., Japan, Jakarta, etc. We received some foods coming these countries, but this time for emergency only so we have not enough for foods because more than one month only.

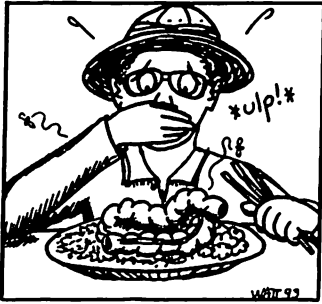
And this time we feel earthquake (aftershocks) but small only we feel three times a day sometimes we feel one time a day.

We begin our house to stand but the case is we have no money to buy nails and cogons (?). This is all and God bless you always and also your family circle.

We thank you. Your homeless friends, Tony Tindaan, Viola Tindaan, Elliott Tindaan.

I sent them a hundred dollars! Paltry, but it helped them buy nails!

32. Palawan



Fred Alcasid had put a banding team on Palawan and we wanted to see how they were working. Palawan is a long island extending across the Sunda Sea almost to Borneo. We flew in from Manila, Fred, Sheldon Severinghaus, and I, and landed at Puerto Princessa. It was a Sunday and although Shel and I had U. S. money, we could buy no pesos because the rate of exchange was changing, and no one would take our dollars, so Fred had to support us on his meager funds. A

jeepney took us to a bus "terminal" where among rusting hulks an open bus stood waiting patiently with bared motor and no radiator. Mechanics were hovering around it and tinkering noncommittally. Within the bus were a miserable squealing hog and several hopeful passengers. Two hours later the motor and radiator had been reassembled, a chunky barefoot "bandido" mounted the driver's seat, propped open the windshield with a screw driver, spit through a hole in the floorboards, the truck roared into life, and we were off in a cloud of dust to Aborlan.

Topping a hill there was a long slope before us at the bottom of which was a narrow bridge under repair. The bus hurtled down toward it, the barefoot driver unmindful of faulty brakes or workmen who jumped aside as he threaded the repairs. Several miles later the bus broke down and we hailed a logger in a jeep who ferried us on. Aborlan was a pretty little town, but we spend a restless night in an inn, peopled with bed bugs. I had long since learned to carry my sleeping bag of insecticide treated balnets to avoid the torment of these insects. Beds were more comfortable than the floor and the insecticide kept the bugs away. In the morning we moved out to our bird banding station in the foothills. Here there was a bamboo shack in which 18 people dwelt including our bander who had set up his "lab" on a portion of the "veranda". Men tilled the fields or carried axes into the receding forest and their young wives whiled away the hours playing with infants as if they were dolls. For two days we tracked the elusive White Cockatoos, watched streams of immense Imperial Pigeons fly from horizon to horizon and tried to avoid being bitten by captured parrots as we banded them. This was nigh impossible until we took some adhesive tape from our first aid kit and taped their bills closed before trying to remove them from the mist nets.

We boarded a jeepney along with the baggage of 18 other people and drove south until the road ended in a buffalo trail over the mountains. A three hour walk brought us out on the China Sea at Quezon where the Philippine National Museum had a well equipped biological station at the outlet of a small limestone cavern from which poured a small stream. Bats clung to the roof and we found that the water that we were served unboiled was from this stream; our daily quota of dilute bat urine we called it. Mosquito larvae also danced in our drinking water, but they only added protein to our diet.

Hot, tired, and muddy, I stripped things from my pocket and waded fully

clothed into the stream. I called to the house for a candle and floating it on a small board pushed it ahead of me as I penetrated deeper into the cavern. The shallow water gradually became deeper as the narrow channel curved into the mountain and tiny fish jumped toward the flame after small flies and beetles that hovered about it. Slowly I moved on until the walls became so steep that I could no longer cling to them. Back at the entrance Sheldon wanted to explore with me and we pushed off into the mountain. Far back where a bend in the channel obliterated the light from the entrance he pushed the candle on its tiny raft too exuberantly and it capsized, plunging us into darkness. As I tell it, there we were in stygian blackness deep in the maw of a mountain, and Shel would counter, "Aw, we weren't a hundred yards from the entrance!!"

Later a frail outrigger canoe which nearly capsized a mile off shore took us to a limestone massif where small caves had been man's habitations for ten thousand years. Museum staff were excavating these sites and the area was considered a national monument. Monkeys have disappeared from most of the Philippines, but here we saw Crab-eating monkeys along the beach, actually eating crabs. Hornbills, White Cockatoos, and Fairy Bluebirds flew among the trees ringing the cliffs.

A few hundred yards off shore from these caverns was a small sandy island and on it we saw our first Nicobar Pigeon and several nests of the peculiar Megapode. This is the bird that digs a massive nest of sand, piling and repiling the sand to control the temperature around its eggs. The young hatch almost capable of flight and are given little or no parental care. As was to be expected all of the eggs of these nests had been purloined by local fishermen. It was years later in Australia that I could see the megapode, The Mallee Fowl, in a protected refuge, industriously working at its nest (the male does all of the work), indifferent to me watching from only a few feet.

Our stay at Quezon was brief and early in the morning we trudged back across the mountains to board another jeepney to take us to a village where the village headman feted us. His wife was so overwhelmed by this visit of "dignitaries" that she slaved for hours preparing a feast. For once I met my culinary nemesis. The rice was poor, the food too seasoned, and the uncleaned pig intestine was barely cooked. My stomach rebelled. We took polite bites and complimented the master on his wife's cooking and then retired while the numerous children who had been salivating in the background rushed in to share the delicacies. Shel and I shared a single mosquito net, sleeping on the bare floor of a hut, but avoiding almost certain malaria infection.

On to Puerto Princessa we dickered for and finally hired a jeepney to take us north along the east side of the island to the end of the roads in the north. By late afternoon of another day we had just about reached this end when we sighted a group of ten negritos. They had come to a settlement to barter and were returning to the hills. They were a cheerful lot and permitted many pictures for which we loaded them all -- five men, four women and a girl, plus one dog and much baggage -- into the jeep and hauled them a mile or two further toward their destination. This was a beautiful coast with clean sand beaches bordered by coral trees with their coral colored blooms, among which

fed flocks of the white cockatoos with crimson bellies and under tail coverts. Frigate birds high above the beaches on effortless wings plied the coastal breezes.

Paddling up a stream we searched for crocodiles, but leather hunters had preceded us and we saw not even one tiny crock.

Palawan is almost divided in the middle by a narrow waist and as you cross it by boat you are greeted by a sign announcing "Welcome to the Golden Gate of the West". You reach this "Golden Gate" via motor boat or canoe winding in a brackish channel between tall secondary mangrove forests. What an awe inspiring sight this trip must have presented as it threaded among the two hundred foot high mangroves of the primary forest of yesteryear. The east entrance of this gateway consisted of a parcel of bamboo and palm shacks but after you had traversed the channels you were greeted by a view of a tremendous escarpment to the north, National Park quality for any nation and well worth the mosquito-bitten trip.

The glory of the dwindling forests on Palawan was amplified by the utter poverty of the people scratching at a denuded soil. They were friendly and hospitable and fed us their poor food; half cooked rice served cold along with greasy pork or their delicacy of uncleaned pig intestine that I have already mentioned. The diet finally threw me and I lost ten pounds, but as soon as Shel and I returned to Manila we steered a course to the nearest sweet shop and quieted our stomachs with three chocolate sundaes apiece.

The wildlife in Palawan was the most spectacular of any that I had seen outside of the tropical rain forests and I wanted to do something about it. There were abundant doves, cockatoos, and other beautiful birds as well as the rare Peacock Pheasant and forest still spread over the midriff of mountains the length of the island. I prepared a letter, but never mailed it to President Marcos for I realized that mentioning these wonderful animals would only be sending them to their deaths. Uncontrolled hunting had extinguished wildlife over most of the Philippines and as soon as it was brought to the attention of authorities that it remained here the hunters would descend upon it. That was twenty years ago and I understand that now some nominal protection is supposed to be in effect.

Innumerable stories arose from the armed forces over seas. In one of the islands of the southwest Pacific, the military health officer felt that the natives, probably Papuans or their extractions, should be taught the values of sanitation. He assigned a young sanitarian to go among them and to enlighten them. The young officer had an interpreter. Things went well from village to village until he contracted a cold. At the next village his audience snickered, pointed at him with peals of laughter, and ridicule as he lectured. Nothing is as disconcerting as being laughed at but not being a partner to the joke. Gradually infuriated he turned to the interpreter and accused, "You must not be translating what I am saying or they would not be laughing!" "But sir," replied his aide, "These people have only one word in their dialect for body

wastes and you are blowing your nose and putting it in your pocket!"

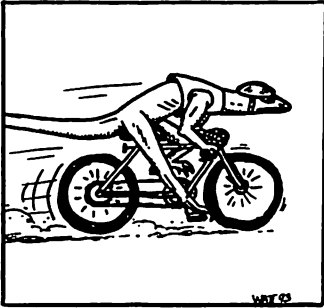
Then there was the young lieutenant who had worked with me at Mare Island. The American military had the policy of assigning nearly everybody with any biological training to mosquito control units. He was a PhD in Botany, but he was still put in charge of a mosquito control unit, especially looking for the *Anopheles*, deadly carrier of malaria. A helicopter had set them down along a stream in the back country in Guadacanal. He and his small party of GIs were working slowly along the stream edge checking the water there and at nearby pools for the *Anopheles* larvae. They came around a bend in the stream and there was a bare-breasted young woman washing clothing on the rocks. She uttered a small scream of fright and there was a crashing in the jungle as someone hurried toward her. The lieutenant and his party stopped in apprehension. A warrior broke from the foliage and stepped to the woman's side brandishing a long spear. The lessons in pidgin English that the lieutenant had had forsook him and all he could think of was, "Me killi-killi man! Me killi-killi man" (I am a soldier). The warrior leaned on his spear and said, "Oh yes, I heard that the marines had landed," with a fine English accent.

A young British scientist was studying the birds of a forest near Kuching in Borneo and was banding some for MAPS. Among the birds he also caught a few of the big eyed nocturnal Tarsiers, considered by some primatologists to be the most primitive of primates and an amazing little creature of the trees and darkness. The Britisher put a numbered ring on an ankle of each, but never saw or caught them again. He had been in the back country at some of the most distant long-houses. One evening as he and several head-hunters were standing near a fire he looked up and called their attention to a satellite passing over, still in the light of the sun already below the horizon. One of the warriors leaning on his blowgun asked casually, "Do those things run on liquid or solid fuel?"

I was with a group of aborigines visiting at Lord Medway's hut up on the Gombak Watershed near Kuala Lumpur and as I stepped out and looked up a satellite was moving among the stars. I yelled to the dancing abos and they poured pell mell out to see it. They also understood what it was!

On my first trip to Kuala Lumpur I was taken into the forest by Wyatt-Smith, a prominent forest ecologist, and to an aborigines village. Asking if I could see inside of a stilted bamboo hut the owner smiled and I climbed the ladder. It was clean inside, with no furniture, and the cooking place where his wife was working was of clay spread over woven bamboo floor, preventing fire. On one wall was a poster sized newsprint of Bob Hope. I often wondered if he really understood how far flung was his fame!!

33. *Australia*



During the years of MAPS I had several occasions to confer with bird banders in Australia, and in 1974 attended the World Ornithological Congress at Canberra. Lucy went along and we spent three months circling almost the entire continent.

Our port of call was Darwin where we met about thirty other bird watchers and embarked on the most successful and impressive birding tour that I had experienced. Our guides

were young wildlife experts who had explored the route before us and knew the whereabouts of every species. Within two days we were accusing them of tethering the birds so that they would be present when we were. We went by bus south from habitat to habitat stopping for exploratory walks to see what they had located for us. Things like, "When we drive around the next curve look to the left and there will be a Chestnut-quilled Rock Pigeon on a rock in the background", and there would be! Only once on the whole trip to Katherine did our guides miss. "When we go over the hill ahead of us there will be a small reed filled marsh and there we will see a colony of Lady Gould Finches." All of us eagerly awaited this moment for Gouldian Finches are of the color of a rainbow. We mounted the hill and before us lay the marsh. It had been burned! We tallied 170 species by the time we reached Katherine, lifers for most of us.

We flew on to Alice Springs and while I continued birding Lucy attended the annual camel races there. After the conference in Canberra we joined Arthur and Pauline Reilly in Melbourne, loaded their Caravan, and drove west around the Great Right and north into the iron country.

The iron country of north western Australia is a vast rolling to mountainous semidesert of coarse desert plants, emus, dingoes, kangaroos, mesquite-like thickets, and red stone of iron. Whole mountains of bare rock so rich in iron-oxide that the stones can be cut with an acetylene torch and welded back together. Some assay as much as 60% iron. Mining companies had built outposts in this harsh water starved environment; mining headquarters provided with air strips, luxurious quarters for the operators, and motel-like quarters for the workmen, fully equipped mess halls and kitchens, landscaped grounds, etc; and fabulous menus of foods flown in. Everything but bordellos to keep the men happy.

Scott and Sue Reilly were maintaining one of these camps before the actual mining operations were to begin.

Toilets and wash rooms were separate from the quarters. The first evening that we arrived we entered the brilliantly lighted rest rooms to wash up. Seated upon a toilet I felt something cool upon my gluteus maximus. Startled, I arose quickly, but there was nothing. Seating again gingerly, I again felt the cool touch, several of them, and jumped. Again nothing. I raised the toilet seat and there on the underside clung several beautiful pale pink tree

frogs. Their little hands on the buttocks were the cause of the cool touch. Laughing, I carefully scooped them off and to the floor. A squeal from the women's room indicated that they too had suffered the cool touch. However, the women were also biologists and responded as I had to the tiny frogs.

Next I washed my hands and one or two indignant frogs came up out of the drain. Exploring I found them lined under the lids of the toilet tanks, anywhere that there was permanent moisture. A lovely desert tree frog that having found these places were luxuriating in the wetness.

For the rest of our visit we warned each other, "Watch out for the bottom frogs!"

All during the trip we had bathed in the glory of Australia's parrots; Lincoln Parrots, Sulfur-crested Cockatoos, Eastern, Western, and Crimson Rosellas, flocks of Cockatiels and Budgerigars, King Parrots, Gang-gang Cockatoos, Yellow-tailed Black Cockatoos, and on and on. The old rose Galah had been with us all of the way and were numerous at the mining camp. Each morning they arrived, a few at a time, stopping to drink at the water tanks where overflow left small puddles, or coming directly to the Mulga trees which were in fruit. These acacia-like trees bore small pods, each with several peas. The parrots plucked them and ran them through their beaks expertly removing the peas. The dropped pods formed mats beneath the trees, those of which that grew among the lawns bore heavier crops than those in the desert. These were favored trees to which nearby a hundred Galahs gathered by 0900 feeding and fussing until about noon. Following a short preening and siesta they returned to feed until near 1500 when they flew back into the desert.

I spent hours in a blind by a water hole watching the ebb and flow of thirsty animals. The Galahs watched from nearby trees and then flew directly to the shore to walk to the water's edge and drink. They gulped the water and raised their heads like little rose-colored chickens, a routine that they followed twice a day. Zebra Finches arrived in flocks, scurried about the trees and shrubs and then dropped to the water's edge in groups to bathe and drink. Tiny Diamond Doves landed back from the water, hurried to it in a determined run only to dash away if disturbed and quickly return. The Plumed Doves were much more wary, alighting far back from the water, talking among themselves, and came forward in short rushes. The Crested Pigeons and Bronze-winged Pigeons remained back among the trees and were so wary that few risked getting a drink while I was present. All of the doves dipped their bills into the water sucking it up as little pumps. None was particularly quiet when gathered to drink with much talking and gossiping among them.

Two Bicycle Lizards came stealthily among the shrubs, walking and snatching at small insects and each had a short drink. One stalked a dragonfly, was startled and dashed off in a bicycle run. The other, somewhat larger, reared upon its hind legs and raced upon some insect catching it in mid-air. A perfect demonstration of the way that the little Dinosaur *Compsognathus* started its evolution into *Archeopteryx* and birds.

I continued to have a feeling of science fiction about this harsh red land. It was and is unworldly; iron mountains, red plains of iron, harsh spinifex on soil among black and green Mulga interspersed by tall red termite or ant

towers also of iron. White Gum Trees stalking along the arroyos, iron trees growing from the outcroppings of pure iron.

It is as if a race of men from outer space settled here with their incomprehensible machines that beat at the iron, bulldozing the scanty vegetation, flying in small projectiles, creating stations of aluminum or stainless steel from which emanate those who attack the iron with drills and noise and who retire to these portable houses amid light and air conditioning, eat strange foods, and draw water from the iron itself to create artificial oases of green. The upright kangaroos, like little men, watch this change in their homeland with uncomprehending eyes. Standing by runway, road, or lawn to watch and wonder what has come to pass and will it go away. The whole scenario complimented by its beautiful birds and insects is unreal, temporary, and a little terrifying.

A bush-pilot landed on the small rocky airstrip at the camp, picked up Pauline and me and flew us 125 miles to an active iron mine, Marandoo, where she and I were to give evening lectures. We flew over angular black cliffs of cracked iron stone to the camp made up of portable box-car type houses of steel and aluminum and after meeting officials drove on west and north to a mountain range of angular cliffs and deep gorges.

Back at Marando we were served a king's ransom supper. The cook outdid himself each day to feed the fifteen men stationed there. In addition there were four married couples in nice little homes. Our menu included savories, four meat items, steak, hamburger, roast turkey, lobster Neuberger, six kinds of salads, ice cream, fruit, drinks. Breakfast was equally as robust; chilled fruit juices, bacon and eggs, buttered asparagus, steak and mushrooms on toast, etc., etc.

After the "modest" dinner, at 2000 we were to give our talks. Their small bar was open until 1800 with supper at 1900, then the bar and pool hall reopened until 2000; lights out at 2300. I talked on ecology and was plied questions and Pauline told them about her work with Fairy Penguins. The bush-pilot had us back at Rhodes Ridge by 0800 the next morning.

It is a harsh land of iron, iron so pure that the great hills crack from the heat of the sun into angular crevasses along the lines of iron crystals. Red cliffs so square and sharp, as if designed by a cubist. All animals take the cast of red dust! Even the swallows are peculiarly square little artamids (wood swallows) with black faces and a dusty brown color. The land is sparsely covered by clumps of grass-like plants, spinifex, with blades of steel so sharp that they penetrate boots and clothing and savage enough to inflame the skin. We drove past large areas of this which had been burned, land that is invaded by a legume with seeds shaped like cockroaches which were palatable to cattle that numbered about one per square mile.

For another day I watched the Crested Pigeons gather at a mustering tree near the seep, about thirty arriving on ringing pinions of steel. They court by bowing and showing their bronze wings and spreading their fan-like tails. Startled they dart whistling away to stream back for their drink. Even the Plumed Dove has pinions that sing when they fly, but they run among the spinifex with the endearing movements of mechanical toys. These birds are

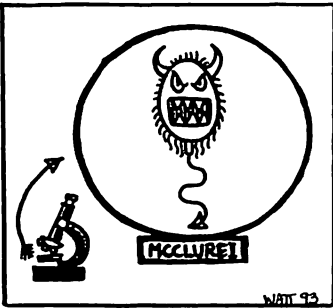
early, but the Galah is lazy and late, arriving after 0700 or 0800, colored like the land with softer reds and gray. The emu with its ridiculously small head and round shrub shaped body of filmy feathers moves stately among the Mulga it so closely resembles. In haste they raise their skirts daintily and run like old maids. The Dingoes run over the land and among the harsh vegetation like puppies lost from some earlier invader who failed to survive.

An iron land, prehistoric, under a blazing white sun which inflames the cliffs until they turn black with heat. Only the Iron Tree can grow in such an environment, but ghostly, twisted, white Eucalyptus are scattered among the black and green Mulga. And among it all are the iron towers of the termites which govern the land. The little man-like kangaroos are only the residents, it is the termites that mold the environment. Sheltering themselves from the savage sun by corridors of iron, they mount every tree and every fallen log to reduce it to more red mulch. Yet this is so slow a process that the attacked tree remains standing maybe for centuries. A savage, heartless land kind only to those that have evolved in it and with it and resisting all others. The crowning adaptation was seen in that of a small lizard *Tympanocryptus cephalus* prosaically named the Brown Earless Dragon. It was small, only a few inches long, and was so perfectly camouflaged, the color and essence of the soil, that with its small legs drawn beneath it looked like two small ironstone pebbles.

We broke up, Arthur and Pauline to Melbourne where she went on to study penguins at MacQuarrie Island, Scott and Sue stayed on, and Lucy and I flew to Perth for a few days visit with Paul Wycherley and his family. Now manager of the great King's Park, we knew him as botanist at the Rubber Research Institute in Kuala Lumpur. Our trip closed with my bird tally at 260 species, and we returned to Bangkok via Singapore and Kuala Lumpur to be informed by the SEATO Lab commander that I was AWOL.

[1968: Annual Report Applied Research Scientific Corporation of Thailand, Bangkok, July 1969. 1969: ASRCT Sep.1970. 1970: ASRCT, July 1971. 1972: Birds banded in Asia during the MAPS program, by locality from 1963 through 1971, (McClure, H.E. and Leeleavit, P.). Sad songs through the chicken wire, Bangkok Magazine, Jan.; Is There Another Way? Impact, March. Bangkok World. 1973: The avifaunal complex of an Open-billed Stork colony (*Anastomus osciatus*) in Thailand. Natural History Bulletin of the Siam Society, 25 (McClure H.E. and Kwanyuen, P.); Some ectoparasites of the birds of Asia. Migratory Animal Pathological Survey, ASRCT, Bangkok, (McClure, H.E. and Ratanaworabhan, N.). Some aspects of bird migration in Asia. Nature Conservation in the Pacific, Australian National University Press. The Nature of Tomorrow, Impact, Feb., Bangkok World. 1974: Migration and survival of the birds of Asia. SEATO Med. Res. Lab. Publication. Some bionomics of the birds of Khao Yai National Park, Thailand. Nat. Hist. Bull. Siam Society 25. 1975: The subgenus *Persicargas* (*Ixodoidea*; *Argasidae*; *Argas*). 20. A. (P). *robertsi* parasitizing nesting wading birds and domestic chickens in the Australian and Oriental regions, viral infections, and host migration. J. Med. Ent. 11 (Hoogstraal, H., Kaiser, M.N., McClure, H.E.). 1976: The human side of bird banding. North American Bird Banding.1.]

34. New Species



The international banding program was a huge success. Each year we brought all of the team leaders together for a MAPS conference and training in a different environment; Japan, Hong Kong, Taiwan, Luzon, Bangkok and Khao Yai, Kuala Lumpur and the Gombak forests, New Delhi and Bharatpur's great marshes of wildlife. Each of these were sources of more stories and events.

Earlier Fred Alcasid had been collecting in Leyte and on a mountainside one of his collectors shot into a small flock of birds which they immediately recognized as new to science. He sent them to a museum where they were pirated and named *Micromacronus leytensis* with Fred mentioned only as the collector. To my knowledge the species has never been seen again.

One day in 1968 Kitti Thonglongya came excitedly into my office. He had been banding birds at a vast marsh near central Thailand, Bung Boraphet, and they had netted several peculiar swallows that had never been seen before, a beautiful thing with striking yellow eyes and eye rings and a long, delicate racquet tail. He had brought one back alive, hoping to show it to the King and to name it for his Highness. I photographed the bird and urged him to band and release it so that we could see how it flew and learn a little about it, for they had not been identified among the thousands of House Swallows that use this great marsh as a winter roost. He declined and the bird succumbed. Knowing that the species might be pirated by some unscrupulous biologist and he might lose the opportunity to describe it, I advised him to send my pictures to the British museum for advice as to its originality and affinities. This he did and learned that it appeared related to a River Martin of the Congo River in Africa. He described the delicate creature and named it *Pseudochelidon sirintarae* in honor of a daughter of the Royal House, a Princess. One or two other specimens showed up in bird markets and Kitti searched the river beds of northern Thailand but found no colonies or nesting sites. Like *Micromacronus* it may already be extinct and was discovered just before it was lost forever.

As his interest in and studies concerning bats developed, Kitti began to find new species and new distribution records within this poorly studied group in Southeast Asia. Then he burst into my office in the fall of 1973. He had found a new bat in a cave in north central Thailand, a bat so strange and so tiny that it must be a new family as well as a new genus and new species. Biologists scoffed; one didn't find new families of mammals in this day and age. He enlisted the aid of Dr. Edwards Hill and he too became enthusiastic about this strange creature and was studying it at the time of Kitti's tragic death. (He had a heart attack following a game of badminton.) When all of Kitti's specimens were sent to him for further study and comparison with the collections of the British Museum, yes, it really was a new family. Dr. Hill has

since described it as *Craseonycteris thonglongyai* of the new family **CRASEONYCTERIDAE**.

Kitti had not only discovered a new species, a new genus, but the second of only two new families of mammals in this century.

Because of the importance of malaria and other diseases borne by mosquitoes, chemists have been improving on citronella as an insect repellent and during the 1960's we were shipped an oily looking solution which researchers said had promise as a repellent. It was diethyl-meta-toluamide. Used on the skin it gave a mild warming sensation, dissolved plastic wrist bands and the surface off of your binoculars or camera, but it really did repel mosquitoes. One application resisted sweating all day long and would give protection for eight hours or more. The same element now used in diluted form in commercial repellents is good, but not as good as that concentrated stuff was. So we used it and watched mosquitoes back off horrified.

Soosi and I were netting birds in a rhinoceros refuge along the Bernam river in southern Perak (central Malaya). A dredge operation had altered the water tables by digging a long deep drainage ditch which drained some areas and flooded others. Trees had drowned and died in one of the flooded areas near which we were setting nets to learn what birds were being affected by this. I glanced down at a hand just in time to see a large *Anopheles* mosquito alight for a meal. Quickly brushing her aside (biting mosquitoes are female since the males take no blood) I applied more di-ethyl-toluamide to my hands and face which I had thought were adequately protected. More *Anopheles umbrosus* flew up and alighted unperturbed on the saturated surface. I couldn't believe my eyes! I had worked where clouds of mosquitoes had swept by and here was one that was ignoring the repellent.

Back at the lab I reported the incident and later we took a small expedition to this forest to see if the actions of the *Anopheles umbrosus* had been exceptional. No, they bit through the repellent on anybody who was wearing it, the only mosquito in sight (of some 65 or 70 species) that did so. To make matters more intriguing nearly half of the females that were old enough to have drawn blood had malaria oocysts on their stomach walls. When a malaria parasite is sucked up with blood, it enters the cells of the stomach wall and a round tumor-like structure is formed in which develop the little swimming forms (sporozoites) that break out of the oocyst into the blood stream, swim in it until they find the salivary glands and collect there. Insect blood does not flow in tubes as does ours. A tubular heart extending along the dorsal surface beneath the hard exoskeleton draws blood in from the rear and sides and pumps it along to pour out in the head upon the two "brains" that are there. Since the salivary glands lie in that region too, this may help the sporozoites to find them. Otherwise the blood flows free in the body between tissues and the body wall where it bathes the muscles and organs carrying the necessary dissolved nutrients to them. It is air that is piped to the cells, not blood, therefore the free swimming parasites can move around inside the mosquito until they find the salivary glands. How they recognize them is probably a biochemical response. So these big *umbrosus* females were full of malaria parasites.

Then began the long syndrome necessary to learn the hosts of such parasites. Malariologists inoculated the sporozoites into laboratory mammals and failed to produce results. Wild and domestic birds were not susceptible. A human volunteer tried his luck and the parasites did not attack his red cells. Snakes and reptiles also were not susceptible. It had to be some animal that was abundant enough to be bitten by many of the *umbrosus* females and also it must be infected with malaria.

In a neighboring forest we had been studying *Leptotrombidium deliensis* (the chigger which is the vector of Scrub Typhus) and the hosts that it would bite. An aborigine named Busu was working with us and, using aboriginal traps and snares, he regularly brought in Mouse Deer, indicating a fairly good population. The malaria people becoming aware of this asked the aborigines in their forest to collect living Mouse Deer, offering a Malay dollar apiece (about 33 cents U.S. at that time). After some weeks very few Mouse Deer had been obtained so it was obvious that they couldn't be the host to this abundant *Plasmodium*. Or was it obvious? Someone suggested that it might be a matter of economics. Five Malay dollars per Mouse Deer were offered and the lab was swamped with specimens, and this proved to be the host of a new malaria *Plasmodium traguli* transmitted by *Anopheles umbrosus*.

The Malayan peninsula is a spur of the Himalayan mountain ranges extending south to the equator and its backbone is a low range of mountains up to 6,000 feet. While the British managed Malaya they sought these highlands to escape the heat of the humid valleys. In these, the Cameron Highlands, were built beautiful bungalows for their escape. On one of the highest peaks, Mt. Brinchang, was established a radio tracking and relay station which had accommodations for visiting scientists. Periodically we mounted expeditions to the peak where we used these accommodations and netted birds along the winding rhinoceros trails that penetrate these cloud forests, although the rhinoceroses are gone. Nets were placed at locations on the top one thousand feet of this mountain in the lovely ericaceous forest among wild rhododendrons.

The birds that we caught were banded and examined for parasites and released (see story about the Red-headed Laughing Thrushes). One evening in 1963 Soosi handed me a bag saying it contained a bird unknown to him. Following is its story:

On March 15, 1963 at the peak of Mt. Brinchang, 6,660 feet in Cameron Highlands, a beautiful small thrush was captured in a mist net placed among the ericaceous shrubs surrounding the grounds of the radio relay station. It was just dusk, so the bird was held in a cage overnight, photographed and released the following morning. It was recorded as follows: "Captured 1800 hours, 4° 30'N 101° 30'E, male, weight 18 g, length 5 1/4 inch (14 cm.), wing 3 inch (7.5 cm.), tail 2 1/2 inch (6.5 cm.), tarsal diameter 1.8 mm., tarsal length 33 mm., length of bill to gape 18 mm. Band N19733."

Since the species could not be identified in texts available to the writer, copies of the photographs were made and sent to ornithologists who had experience with Asian birds, with the following most interesting results.

From Dr. Dillon Ripley of the U.S. National Museum, Washington, D.C.

"May 27, 1963. I am just finishing the thrushes section (nearly 400 pp. of typed MSS) for Peter's Checklist of Birds of the World. Your redstart-like thrush is astonishing to me and I would give a great deal to look at it in the hand. Is it still alive or dead - or a skin or not? If feasible I would much appreciate seeing it. It looks closest to *Phoenicurus* but I cannot put a specific name to it at this distance. How is that for a startling statement?" This made it appear that something new might have been discovered.

Mr. Bertram Smythies was non-plussed by the photograph and sent it to the British Museum of Natural History where Lord Medway had given Dr. I.C.J. Galbraith a verbal description, which left them still in doubt. Dr. Galbraith's reply to Mr. Smythies was: "13th June, 1963. Thank you very much for sending Dr. McClure's most interesting photograph for us to see. As you have probably heard, we could not make anything of the description Lord Medway brought in some time ago. Not surprising, since it almost certainly is *Luscinia ruficeps*, as you suggest, and we have no specimens. Hartert's original description (*Bull. Brit. Orn. Cl.* 19: 50, 1907) is:

'*Larvivora ruficeps*, sp.n. Male ad. Crown and hind-neck orange-rufous; back and rump, upper tail-coverts slaty-black. Quills slate-colour, the edges of the outer webs slightly paler, those of the inner ones whitish-brown. Rectrices orange-rufous, middle pair with the apical third and the borders of the outer webs slaty-black. Lores, and a broad stripe under the eyes and encircling the throat, black; throat white. Feathers below the black circle, as well as those on the sides of the throat and body, slaty-grey; middle of the abdomen white. Under tail-coverts white with slate-grey edges. Thighs greyish. Iris russet; bill slate-black; feet pinkish-buff. Wing about 70-80 mm., tail about 52-56 mm. metatarsus 27 mm., culmen 16-16.5 mm.'

'*Hab.* Tai-pai-sham, Tsin-ling Mountains. (Shensi Province, China).'

'Three specimens had been sent to the Tring Museum. Type No. 1217, 13. vii. 05. Procured by Mr. Owston's Japanese collectors.'

"Without going deeply into the matter, it looks to me as though the species may never have been taken again. We have Dr. Vaurie here at present, but he cannot remember anything about the species from his study of it for his *Birds of the Palaearctic Fauna*. I should very much like to let him take the photograph back to the American Museum next week, so that he can confirm the identification from the Rothschild specimens, and look up his notes on the species. May I do this?"

As can be seen from the photograph Hartert's original description describes this little male perfectly.

Mr. Smythies' comments were: "17.6.63. The little red-headed bird in your photograph resembles nothing known to me, nor could I find anything like it described in the bird books here. Vaurie, however, mentions in his *Birds of the Palaearctic Fauna* a *Luscinia ruficeps* described by Hartert in 1907 in the *Bull. B.O.C.* (which we do not have in the library here); so I took the liberty of sending on your photograph to the British Museum, and as you will see from the enclosed letter my hunch proved to be correct.

I took the liberty of replying that I did not think you would have any objection to Vaurie taking the picture along with him to New York for further

study, and asked for it to be returned to you direct from there.

So far as we know, there are only 3 specimens of this bird in existence and it has never been seen away from this type locality - a quite remarkable record!"

The rarity of this bird is emphasized by the fact that the Chinese authority Tso-Hsin Cheng in his *A Distributional List of Chinese Birds, II Passeriformes*, 1958, records only the original three specimens taken by Owston's collectors in 1905. Apparently not only have Western scientists not seen this species for 58 years, but Chinese authorities as well are unaware of it.

It may be a common bird of the Tsin-ling Mountains singing from bush tops or rocks like others of its genus or it may really be restricted to a small district, but certainly this lovely little male that was apprehended in Cameron Highlands and sent on his way bearing a bracelet of aluminum is one of the rarest birds in the world."

In the thirty years since this was written, China has opened its gates to biologists as well as other scientists but *ruficeps* has not been reported.

As I probed unto odd corners of the world always seeking to understand the complexity of minute ecosystems often overlooked by biologists I had occasion to collect invertebrates from many sources. These I religiously sent to taxonomists specializing in this or that creature or creatures. Although the science of taxonomy pioneered by Linnaeus in 1759 is now over two hundred years old, the job of naming and cataloguing all of the creatures that have evolved in and remain in the world's ecosystems is far from complete.

It is common practice for the biologist recognizing a life form as new to science to describe it and to honor the collector by attaching his name to it (see story about Blanford's Bulbul). At times this may seem ludicrous, but the thinking person realizes that such is an act of kindness, for even an obscure personality now becomes a part of history and is recognized as long as this species is known or referred to in science.

Dr. Ellis Greiner did me this honor in 1976, describing *Leucocytozoon mccluri*, a malaria or haematozoon he found in the blood of the beautiful Dark-sided Thrush, *Zoothera marginata*. The specimen of blood had been sent by a MAPS bander from a bird netted in the mountains of northwestern Thailand.

Another was a small crane fly (Tipulidae) which I had sent to Dr. C. P. Alexander from my collections at Churchill, Manitoba in 1936. *Limnophila (Idioptera) mcclureana* (1938) was breeding in and hovering around small pools of the sphagnum-lichen dominated tundra.

A beautiful tiny scale winged fly, one of the many species of this group that like moist fungus infected environments hovered about my lamps as I explored Batu Cave in 1960. It became *Telmatoscopus mcclurei* when Larry Quate described it in 1963.

Two other new species appeared in the cave study. Dr. David Werner in examining the numerous beetles found four new aderid (Aderidae) beetles; tiny fungus feeding species. These he named *Euglenes batuensis*, *cephalicus*, *malayanus*, and *Aderus mcclurei*. The flies which the dipterist Curtis W.

LEUCOCYTOZOOM MACCLURE SP. N. (HAEMOSPORIDIA
LEUCOCYTOZOOIDEA) FROM A THAILAND THRUSH
ZOOOTHERA MARGINATA BLYTH

Ellis C. Greiner
International Reference Centre for Avian Haematology, and Dept. of Biology, Memorial University, St.
John's, Newfoundland, Canada

ABSTRACT. A new species of Leucocytozoon with elongate gametocytes and unique morphology is described from a Thailand thrush, *Zoothera marginata*, and represents the first fusiform leucocytozoid named from a passeriform. This species appears to be restricted with respect to geographic distribution.

Ellis, Desser, and Dunn (1974) have revised the taxonomy of the genus *Leucocytozoon*. They stated that over 25% of the named *Leucocytozoon* spp. were described from passeriform hosts, that none of these species possessed elongate gametocytes. In the examination of blood films from 885 individuals of 45 species of Turdidae from South East Asia, accessed in the International Reference Centre for Avian Haematology (IRCAH) collection, a unique new species of *Leucocytozoon* was found in two lesser-billed thrushes, *Zoothera marginata*. It is described herein.

MATERIALS AND METHODS

Blood smears from South East Asian birds have been deposited in the IRCAH collection by Drs. R. E. Kuntz, Marshall Laird, and H. Elliot McClure. The two *Zoothera marginata* infected with this new species were collected on May 10, and 12 March 1970 in Chang Kheon, and Chingmai (Northwestern Thailand), respectively. Gametocytes and uninfected erythrocytes from these 2 thrushes were drawn with the aid of a Zeiss Camera lucida and their areas were determined by counting squares (1 square = 0.25 μm^2). Host-cell-parasite complex lengths were measured by projecting the drawings lengthwise. Photomicrographs were taken with a Zeiss Photomicroscope III. Parasite, host nucleus, and host-parasite indices were calculated by the methods of Brown, Campbell, and Khan (1974).

Species of Turdidae from South East Asia, including Thailand, from which blood smears were examined included: *Brachyophaps leucophrys*, *P. montana*, *Cinclidium montana*, *C. leucurum*, *C. purpurea*, *Copsychus saularis*, *C. malabaricus*, *C. niger*, *C. turcomanus*, *C. saularis*, *Enturus leschenaulti*, *ruficapillus*, *E. whistaceus*, *Erithacus rubecula*, *E. cyaneus*, *E. cafer*, *E. ruficeps*, *E. speciosus*, *Monticola cinerea*, *M. solitaria*, *Myiophobus caeruleus*, *M. robinsoni*,

Onanthides lineatus, *Phoenicurus auroreus*, *caeruleus*, *P. ochropus*, *Saxicola caprata*, *Turdus*, *Saxicola rubra*, *Turdus bairdii*, *T. philippinensis*, *T. chrysolaus*, *T. dissimilis*, *T. merula*, *T. manni*, *T. obscurus*, *T. pallidus*, *T. ruficollis*, *T. rufopectus*, *Zoothera andromedae*, *Z. caerulea*, *Z. dauma*, *Z. interpres*, *Z. marginata*, *Z. sibirica*. The total number of individuals examined was 885, and 193 of these harbored species of *Leucocytozoon* other than the new species described herein.

DESCRIPTION

Leucocytozoon macclurei sp. n.
(Figs. 1-4)

Type host. *Zoothera marginata* Blyth (Passeriformes: Turdidae).

Type locality: Chiangmai, Thailand.
Type slide #41296 and Paratype slide #41297 deposited in the International Reference Centre for Avian Haematology.

Macrogametocytes: (Figs. 1, 2; Table 1). Elongate parasites (Fig. 1) by 6.9 μm , 83.1 μm^2 in area. Cytoplasm staining deep blue, granular with non-refractile eosinophilic granules (= eosinophilic pigment of Bennett et al., 1974); nucleus oval to round, centrally or eccentrically placed. Host cell nucleus uniformly dispersed throughout the border of fusiform host cell cytoplasm and forming a narrow (0.5 to 1.0 μm) band laterally around parasite, with occasional clear vacuoles adjacent to the gametocyte periphery. Distorted host cell nucleus 50.0 μm^2 in area; host cell nuclear index 1.2; parasite index 1.4; host-parasite index 9.3.

Microgametocytes: (Figs. 3, 4; Table 1). Elongate parasites 14.6 by 5.6 μm , 72.1 μm^2 in area. Cytoplasm staining faint blue; nucleus occupies about 50% of the gametocyte area. Host cell nucleus same as that of macrogametocyte. Distorted host cell nucleus 27.1 μm^2 in area; host cell nuclear index 4.1; parasite index 1.1; and host-parasite index 2.0.

Schizonts: Unknown.

Vegetative: Unknown.

This species is named in honor of Dr. H. Elliot McClure, who contributed the type specimens as well as many of the South East Asian blood smears in the IRCAH collection.

Received for publication, 22 October 1975.

TABLE 1. Morphological measurements of *Leucocytozoon macclurii* expressed as means and standard deviation.

| | Length (µm) | Width (µm) | Area (µm ²) | Index |
|---------------------------------------|-------------|------------|-------------------------|-------|
| Merozoogamete (N = 10) | 16.4 (2.4) | 8.9 (1.9) | 81.1 (22.2) | 1.4* |
| Merozoogamete (N = 10) | 12.3 (2.3) | 7.8 (0.9) | 61.4 (5.7) | 1.2* |
| Host Cell Complete (N = 10) | 19.7 (4.3) | 7.9 (1.4) | 14.1 (1.1) | 2.3† |
| Host Cell Complete (N = 10) | 18.7 (3.0) | 6.8 (1.2) | 14.8 (1.1) | 2.0† |
| Host Cell Nuclear Distortion (N = 10) | — | — | 50.0 (6.5) | 4.2‡ |
| Host Cell Nuclear Distortion (N = 10) | — | — | 49.1 (6.7) | 4.1‡ |
| Normal Erythrocyte (N = 20) | 11.6 (0.7) | 6.7 (0.5) | 57.8 (6.6) | — |
| Normal Erythrocyte (Normal) | — | 11.5 (0.5) | 11.9 (2.9) | — |

* Parasite Index: Mean area of gametocyte ÷ area of uninfected erythrocyte.
 † Parasite Index: Mean area of host cell parasite complete ÷ area of uninfected erythrocyte.
 ‡ Parasite Index: Mean area of distorted host cell nucleus ÷ host cell parasite complete ÷ mean nuclear area of uninfected erythrocyte.

similar to *L. fringillinarum* (Fig. 5) and *L. macclurii* (Fig. 6) were present on one blood smear containing *L. macclurii*. Although the gametocytes may be forms of *L. macclurii*, it is thought best to limit *L. macclurii* to the elongate form until proven otherwise, at which time the description should be amended. Bennett and Cameron (1975) demonstrated multiple infections of *Leucocytozoon* spp. in birds from Atlantic Canada. Thus it is not impossible for *L. macclurii*, *L. fringillinarum*, and *L. majoris* were present concurrently in the lesser long-billed thrush.

Examination of 885 individuals of 45 species of thrush from South East Asia revealed *L. macclurii* to be a species restricted by geography and by host. Part of the parasite's geographical restriction is a reflection of the only known host's range, which according to Mayr and Paynter (1974) stretches from North Vietnam and South Viet Nam. No gametocytes, notably resembling *L. macclurii* were observed in any other species of bird from South East Asia. Similar restriction of hemoprotozoan species to a single avian host has been demonstrated experimentally by Baker (1966, 1968) working with *Haemoproteus palumbus* in two species of pigeons and by Morii and Kitaoka (1971) working with *Akiba caulleryi* in several species of gallinaceous birds. Bennett, Okia, Ashford, and Campbell (1972) reported that *H. enucleator* was restricted to one species of kingfisher, even though a number of other kingfisher species were examined. Thus the occurrence of *L. macclurii* in only one species of thrush, in a diverse thrush community infected with other species of *Leucocytozoon*, is not unprecedented.

ACKNOWLEDGMENTS

I thank G. F. Bennett and C. M. Hermann for their constructive criticism of this manuscript and to the National Research Council of Canada for financial support.

LITERATURE CITED

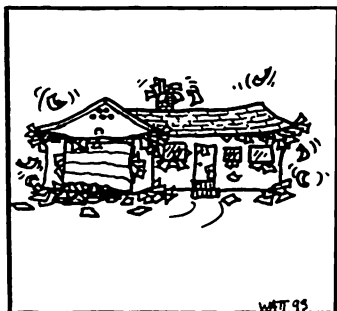
- BAKER, J. R. 1966. The host-restriction of *Haemoproteus* sp. indet. of the wood-pigeon *Columba palumbus*. J. Protozool 13: 406-408.
- . 1968. The host restriction of *Haemoproteus columbae*. J. Protozool 15: 334-335.
- BENNETT, G. F., AND M. F. CAMERON. 1975. Mixed infections of species of *Leucocytozoon* in individual birds from Atlantic Canada. J. Parasitol 61: 1091-1095.
- . A. G. CAMPBELL. 1975. Avian *Leucocytozoon*. I. Morphometric variation in three species of *Leucocytozoon* and some taxonomic implications. Can J Zool 53: 800-812.
- . R. KHAN, AND A. G. CAMPBELL. 1974. *Leucocytozoon grus* sp. n. (Sporozoa: Leucocytozoidae) from a sandhill crane, *Grus canadensis* (L.). J. Parasitol 60: 359-363.
- . N. O. OKIA, R. C. ASHFORD, AND A. G. CAMPBELL. 1972. Avian Haemoprotozoa II. *Haemoproteus enucleator* sp. n. from the kingfisher, *Islandia neta* (Boddaert). J. Parasitol 58: 1143-1147.
- COATNEY, C. R., R. E. ELBEL, AND P. KOCHIRATANA. 1960. Some blood parasites found in birds and mammals from Loi Province, Thailand. J. Parasitol 46: 701-702.
- FALLIS, A. M., S. S. DESSER, AND R. A. KHAN. 1974. On species of *Leucocytozoon*. Adv. Parasitol 12: 1-67.
- MAYR, E., AND R. A. PAYNTER, JR., eds. 1974. Check-list of Birds of the World. Vol. 10. p. 180.
- MORII, T., AND S. KITAOKA. 1971. Susceptibility of the gallinaceous birds to *Akiba caulleryi*. Natl Inst Anim Hlth Q (Tokyo) 11: 170-171.

Sabrosky examined included a new Milichiidae which he recorded as *Leptometopa mcclurei*.

In our work at Rantau Panjang, Malaya, Hussain bin Othman and I collected bird nests as soon as the young fledged, put them into plastic bags, and I examined the nest material for inhabitants or parasites that might be involved in the transmission of disease. Among the common mangrove forest and disturbed forest birds was a drab brown babbler known as Blyth's or Mangrove Brown Babbler *Trichastoma rostrata*. It built bulky nests in low shrubbery which were so well hidden that they were difficult to find. Among the nest inhabitants sorted in January 1960 was a tiny yellow-brown beetle 3.5 mm. long, belonging to the family Erotylidae. These are fungus feeders and those in the nest of Brown Babbler may have been feeding on waste. They proved to be new and Michio Chujo of Kagawa University, Japan named it *Triplax mcclurei*.

There may have been others, but I can't remember them now!

35. Retirement



During the last three years of MAPS, my ten Thai daughters and I tallied and compiled the massive amount of information that had been accumulated. The Thai education ethic does not consider biology as a profession, therefore but few men enter it; being attracted to medicine, law, and the physical sciences instead. Gradually my staff increased to ten lovely, intelligent, and dedicated girls. Somtrakul came to America, obtained a degree in engineering, married three

times, and is near enough to us that we can visit regularly. Puntipa, with a degree in entomology, married a biochemist and they emigrated to Los Angeles and on to North Carolina. Niphan, a PhD in entomology from Florida, became my staff manager and later in charge of the museum at ASRCT. Somchit married Pon, a fruit culturist who had received his degree at University of California, Riverside under Dr. Walter Reuther, Fred's brother. Pilai started out in microbiology and became my field assistant, like Yoshii, travelling with me and acting as my interpreter and informant. She became engrossed in my study of Hornbills and later attached to Mahidol University where her work with these great birds has given her international recognition. (She received her PhD from Japan in 1993) And so on through the entire staff of brilliant youngsters each a story in herself.

Came the time to go! It was 1975 and Lucy and I were 65, the age of retirement. We gathered up the loose ends of life and tucked them away in 15,000 pounds of luggage, but one strand came loose and became tragic. In large cages occupying one side of our small garden were Big Baby, a Great Hornbill, and Brownie, a Brown Hornbill, both raised from youngsters bought at the massive Sunday Market before the Royal Palaces in central Bangkok. Both were pets, Big Baby entertaining us each evening as we sat on our front porch and watched the many other occupants of our garden; Magpie Robins, Blanford Bulbuls, Brown Shrikes, Common Mynas, Geckos, Naked Bats, Swifts, Swallows and others.

I contacted Dr. Art Risser of the San Diego Zoo and he wanted these two birds for the zoo. I wanted these birds to be in a place where they would be well taken care of, for we had experienced the trauma of taking Beautiful Beulah, a Bushy-crested Hornbill, to Japan in 1963 where she succumbed because of improper care. Dr. Risser was to make arrangements to receive them at his end and we would make arrangements for shipping at our end. Pilai and I went to the customs office and obtained the proper export documents which had a time limit. But Art found that quarantine station at California import points were full and would not become available until our export document had lapsed. We renewed and he renewed the import license,

but again they did not mesh. For months there were these continued frustrations.

Came the day that we were packed, our luggage and household goods hauled to the port for shipment and we passed through our garden gate for the last time while Big Baby and Brownie languishing in their cages watched us go. I had given a local animal dealer a hundred dollars to take care of the birds until they could be shipped. In desperation Art inveigled an airline pilot friend to offer to pick up the birds on his next flight to Bangkok. He sent a letter to the animal dealer to have the birds ready for shipment, but there was a postal strike in Bangkok and the letter was not delivered until after the flight had come and gone. We never learned the fate of these birds that we had enjoyed for so long!

In America we stayed with Cam and her husband Bob, bought a car (a white Hornet), and spent three months touring the United States to once again see our homeland and to visit family and friends. Then we bought a house and settled in the town of Camarillo, about fifty miles north of Los Angeles. Both Cam and Jeannette had divorced, Cam had married Bob Folk, and later Jeannette met and married a psychiatrist, Dr. David Powles, as already reported.

Soon after we had moved our 25,000 pounds of collections and household goods into our house in Camarillo (mostly books and artifacts overflowing the garage as well) Dr. Henry Weber, a long time friend, came to see us. He had spent a lifetime fighting to have the Mourning Dove removed from the national game bird list, or at least to have it better managed by the U.S. Fish and Wildlife Service and I had often helped him with data and stories about the dove. As a medical doctor he knew that he was suffering from a terminal illness. He was a member of the Board of the Defenders of Wildlife and would I consider being his replacement. I welcomed the opportunity, but was sad about the circumstances that offered it. A few months later he passed away and I was admitted to the Board beginning an eleven year service with them. This was the most fulfilling of opportunities. I never became an important member of the Board, but served in the capacity of international committee chairman and as a source of ecological information. During this period the society broadened its outlook from North American to international.

Years before as president of the Western Bird-Banding Association I had tried to broaden the efforts of our members in studying California birds. And as president of the Malayan Nature Society, which was then hardly more than an old boys club of Kuala Lumpur, the board and I steered the Society on a course which has led it to be an important force toward conservation in that country. And while in Bangkok a group of Thai scientists and I organized a Sigma Xi Club thereby forcing that erudite science organization to broaden its concept of membership from that of strictly American scientists to scientists worldwide. I even made an appeal for this at an annual meeting in Maryland. Fighting penmanship duels with sportsmen and hunters through all these years I still have not accomplished a better deal for Mourning Doves. They are still hunted while breeding, with losses to young and to breeding parents, but national public awareness of wildlife needs may eventually bring a halt to this

senseless slaughter.

Some years have been more eventful than others and 1983 was one of these. Hardly had the New Year passed and we were already planning for a symposium in which Pilai was to participate.

The Jean Delacour Symposium on breeding birds in captivity, sponsored by the International Foundation for the Conservation of Birds was held the latter part of February and into March. In 1982 through my urging Dr. Art Risser of the San Diego Zoo had induced the Foundation to give Pilai Poonswad a small grant to continue her work with hornbills at Khao Yai National Park in Thailand. The board of the Foundation was so impressed by her work that they invited her to come to Los Angeles to speak at this symposium. She and Atsuo Tsuji, a Japanese photographer who had been helping her, arrived on 21 February. They were booked, as were other delegates, at the Sheraton-Century Hotel in Hollywood. The symposium was a five day affair attended by several hundred people, with four days of papers. Pilai's presentation was very well received. Then we took her and Tsuji to Camarillo where we showed them some of this part of California. California was having one of its wet-times with heavy rains and roaring floods, an El Niño effect, not good birding weather, but we did get to see a few things. We took them to San Diego where Pilai was in conference at the zoo for a few days and then she went to the University of Nevada at Reno to lecture there. We saw her off on her return trip home at Los Angeles on March 12, so she had had a wonderful trip to the U.S. even if it was mostly in California. Since then the Foundation has sponsored her for two more years of work at Khao Yai. Of course, while she was here she had an opportunity to visit with Somtrakul, and to see Cam and Jeannette and their families. One of the greatest compliments that a teacher can have is to see one of his students achieve success and renown greater than his own!

Late in 1982 I had been approached by the Extension Service of the University of California, Los Angeles (UCLA) to guide a tour to the rain forests of Southeast Asia, so while we were having all of this excitement with Pilai I was preparing for this tour as well. The tour lasted from April 10 to May 1, ending at Hong Kong, but I left it at Kota Kinabalu in Borneo (Sabah) and spent another two weeks in Thailand and Malaya, returning home on May 14. Lucy spent the time at home and visiting with Jeannette and Cam.

We stopped enroute overnight at Tokyo and I had a chance for a short visit with Yoshii and his family and with John Masuoka. The tour included stops of a couple days or more at Singapore, Bohorok orangutan rehabilitation center in Sumatra north of Medan, Taman Negara the National Park of Malaya, Kuching and Bako National Park in Sarawak, the Sipilok orangutan rehabilitation center and Mt. Kinabalu in Sabah. All of these places are in tropical rain forests. There were 25 people on the tour; all experienced travellers. Because of shifts in atmospheric conditions in the South Pacific (the El Niño effect again) rain had not fallen in these parts of S. E. Asia since

Christmas. The environment was in severe drought. Fires raged through the forests. A pall of smoke blanketed lands and seas, enough that fires in Borneo created such towering smoke that it closed the airport in Singapore. The rain forests were dry and wilted; no birds sang, no mosquitoes hummed, not a leech humped the pathways. We walked in dry heat with a thick blanket of dry leaves rustling about our feet. I could show the tour participants nothing that I had planned to or that I had told them about. They became ill from the heat and from drinking unwisely. The food and water that we received was good, mainly Chinese. I had warned them to drink hot tea to avoid problems with diarrhea, but after each hike in the heat they guzzled cold beer or Pepsi, and all but two who enjoyed hot tea with me suffered for it. They were disgruntled at it all, saying that they had seen more beautiful forests in other parts of the world.

My duties with the tour were over at Kota Kinabalu and I returned to Kuala Lumpur. Lovely colonial Kuala Lumpur is a mass of modern building monstrosities, condominiums, and roads. Whole mountains have been whittled away to provide space for a highway across the country to the east. But Bangkok, though larger and even noisier than I expected, was familiar and Khao Yai National Park was as wonderful as ever. Even so, the blasphemy of modernity had penetrated Khao Yai in the form of a wide military road from the south that had destroyed a large part of the forest. I was greeted, feted, and fed by happy throngs of friends, stayed in Bangkok with Pon and Somchit and their family, and spent several days with Pilai at Khao Yai visiting her hornbill nests and observation places. Less affected by the severe El Niño effects to the south Khao Yai rang with morning song of a host of birds and wildlife was in abundance. There was a party for me every night while I was in Bangkok and I was treated as well during my shorter stay in Kuala Lumpur. I returned home in ecological shock at the condition of the forests in S. E. Asia and have been writing and lecturing about them ever since.

I had missed the spring Defenders of Wildlife board meeting in Washington, D.C. because I was in Thailand at the time. The fall meeting on November 12 was again in Washington. Lucy visited with Cam and Jeannette while I wandered off. Since Ralph and Margaret Crawford and Phyllis Hensel, Lucy's nephew and niece, had visited with us from Illinois and Florida, respectively, during the week of the anniversary celebration, Lucy decided not to go to Illinois while I was away. I arrived in Washington in fog and rain on the 10th and had committee meetings and the board meeting on the 11th and 12th. I had planned to return home quickly this time, but Bob Traub was having his retirement party from the University of Maryland Medical School in Baltimore on the following Saturday, so I remained to attend it and had a week to visit with friends and relatives. Stayed with Bill and Esther Cook in Annandale and went to Hopewell, Virginia, for a couple of days with cousins Marjorie and George Schultze. The retirement affair included a biological symposium Saturday afternoon at the university and a dinner in the evening. Since the people attending these were doctors and scientists from past activities, I had a chance to see old friends from days in Asia and before.

[1976: Two tropical forests and their birds. *Journal of the Bombay Natural History Society* 71.
1977: The secret life of a tree. *Animal Kingdom*. No. 5; Twenty-five years of bird watching at Mt.

Takao near Tokyo, Japan. *Tori* 26. 1978: Kingfishers, the gems of forests, ponds, and streams. *Zoonooz*. 51. Incandescent roosts of swallows. *Pacific Discovery*. Some arthropods of the dipterocarp forest canopy in Malaya. *Malayan Nature Journal*; Bats over Bangkok. *Natural History Bulletin, Siam Society*; (Pilai Poonswad, Ellis C. Greiner, and Marshall Laird. and H. E. McClure). Haematozoa in the birds of eastern and southern Asia. Memorial University of Newfoundland, St. Johns, Newfoundland. 1979: The miracle of movement. *Hemisphere*. No. 1; Nesting of the White-whiskered Tree Swift in Malaya. *Condor*; The Ring and I. The Ring. 1980: Hornbills, forest clowns. *Hemisphere*. Food webs in a tropical cave. *Hemisphere*. No. 3. 1981: The singers are heard. *Hemisphere*. 1982: Birds of the Kanto Plain - A generation ago. *Jr. Yamashina Inst. Ornith.* 14.]

36. The 50th



The big event of 1983 was our Fiftieth Anniversary; the big day being October First. There was a constant flurry of plans and discussions about it all summer. Cards announcing the event were sent out to over 225 friends and relatives and there were responses from 170 which filled two large albums. Jeannette and Cam and their spouses threw a party for us at Cam and Bob's new home in Simi. As Murphy's Law points out, things that can go

wrong will, and they did even to a 3 1/2 inch rain the night before, which effectively deployed the planned lawn and garden party. Instead, the seventy or more friends milled around in the new house and patio and had a wonderfully convivial time. Our wide circle of friends encompasses a wide range of interests so everyone found something or somebody of interest. People were so busy talking with old friends or making new ones that they forgot to eat up all of the refreshments. Following the reception forty of us descended upon a Chinese restaurant and were served a more than ample delicious supper. David (Jeannette's husband) was master of ceremonies and Greg Leong video-taped the proceedings as participants got up to compliment or pan Lucy and me. A great time was had by one and all. About 25 people joined us at home in Camarillo for a breakfast snack and house viewing the following morning, Sunday.

Many friends and relatives wrote letters reminiscing of bygone days and of the 170 greetings received I have selected 27 that are small windows to the past. Incidents that they mention fit them into the stories related here. These letters are arranged chronologically, approximately when we enter into the lives of the writers. That they are complimentary is proper etiquette, but some hinted at my failings. On a field trip in Nebraska a friend commented, "McClure, you know more ways of making people dislike you than any man I ever met!!" So take these compliments with a grain of salt!

Janet and Jack Tillinghast were introduced in the account of our world trip in 1962. A cousin of Lucy's, she tells about school days. She is tall and vowed to Lucy that she would marry the tallest boy in college and he still practices forestry in West Virginia.

We wish we could join you in your fiftieth year of celebration but we are too far away and too tied up at this time. However, we are thinking about another trip which will probably be to the west coast so watch out - not before next year, though. My memories of Lucy (Esther Lou) go back to my preschool days and through most of my high school years and all of yours, Esther Lou, when you lived at 1444 N. Vermilion & I at 1502 N. Walnut. We took a lot of walks together, especially in high school when I no longer seemed so much like your "little" cousin. They are nice memories.

Of course I only knew you, Elliott, as the lead cheerleader with my old friend, John Sibley, as your apprentice. How I would have questioned the idea of your & Lucy's

marriage then. But I didn't really know you then and I'm very glad you "found" each other later. We would never have gotten to know the interesting and enjoyable person you are.

Jack's introduction to Lucy didn't come until we were in college and to Elliott after you were married, but we both are glad for that acquaintance.

What a fifty years you have had - from Danville, to California, Japan, Thailand, Malaysia! Have I forgotten anywhere important? And we realize what memories you have - and, knowing you, what future plans you have.

Have a great celebration and we hope you or we will make a visit soon so we can see each other.

Congratulations with much love - Janet and Jack Tillinghast.

Ralph Dexter came to the University of Illinois while we were still there. His career was at Kent University and his work with chimney swifts that slept in the chimneys of college buildings is world renowned. (He has since passed away!)

You two were among the first friends I made when I went to the University of Illinois at Urbana - Champaign in 1934. I can recall going to your apartment and examining mammal skulls Elliott had on the mantle piece. During my stay in Illinois, Elliott helped me locate ponds for collecting fairy shrimp and in transportation. We enjoyed classes together under V. E. Shelford, and regular attendance at Hexapoeicia (the entomology club), for which you served as an officer, as well as the Ecology Club.

Our friendship continued over the years with exchange of Christmas cards and the McClure annual letter. We met again at Cornell University for the International Ornithological Congress in 1962. Both of us became ornithologists in due time.

Congratulations on your 50th anniversary together and best wishes! Ralph. W. Dexter

Garland Riegel came to University of Illinois while Lucy and I were still in Entomology and he and Elizabeth Heiss, later Dr. Elizabeth Aarnason were frequent visitors in our inadequate apartment!

It can't be, I tell myself, that Elliott and Lucy McClure have been married for 50 years!! (And then remember that Ruth and I have been married for forty-two...).

My earliest contact with the McClures was during the Spring Semester at the U. of I. in 1935. As a junior transfer from a small Missouri junior college into the Entomology Department at the University of Illinois, I felt like a small fish in a large puddle. But a number of graduate students such as Elliott McClure, Elizabeth Heiss, and Barney Burks soon made me feel at home.

My first invitation out into high society in Urbana was for Sunday lunch at the McClure's apartment!

I don't believe I've seen Lucy and Elliott since they left Urbana for Iowa, but I've

followed their adventures via the famous Christmas newsletter.

It would be fun to attend the gala on October 1st, but we just can't make it due to conflicts with Ruth's schedule.

Ruth and I send our congratulations on your fifty years together, and sincere best wishes for many, many more. Gar Riegel

The Berrys would need no introduction. Ethel and Frank were our important advisors and friends at Lewis, Iowa during the Dove Years!

DOWN MEMORY LANE

An early spring day in 1938 Frank Tucker, Cass County Conservation officer came into the Berry Garage accompanied by a young man with red hair and wearing dark glasses. He was introduced to us as Elliott McClure, a student from Iowa State University.

I had a feeling he was wondering (???) take him to meet folks who repaired cars. (These people became good friends to Elliott's not "too" new Plymouth). Mr. Tucker told Elliott that Frank Berry would help and advise him on his project "The Mourning Dove". You could almost see his blood pressure raise. He asked Tucker later how many college degrees Frank Berry had? Was told he did not know. Bet he blew his top.

Elliott thought that he was to be sent to Red Oak, a county seat town not to a dinky little place like Lewis, with not even a furnished apartment to rent. Within a short time Elliott and Lucy came, rented a house obtained furniture and became residents of Lewis and a part of the community.

They were our guests their first Sunday evening. A dove was sitting on the arbor near the back door "Cooing" I called Elliott to come see (I believe it was his first bird) and hear, he was thrilled to get a close-up look. He "hoped that he would find 100 nests and band a lot of doves". His wish came true with a plus. At that time Lewis had many large trees and lots of birds of all kinds. Soon after daylight we would see Elliott out, head up, looking skyward going from one end of town to the other, tree to tree. Where he could not climb the tree or use a long ladder to see into the nest he used a rope thrown over a large limb and went up hand over hand. Hard work going up but easy to come down if your hands would take it.

By 7 a.m. Elliott had a string of from one to a dozen boys of various sizes following him. The boys soon became Bird Watchers and when they found a little bird which had fallen from the nest be it dead or alive they immediately took it to the Bird Man.

Lucy told me they were living or trying to on \$80.00 per month, pay rent, run their car as well as pay for their furniture and groceries. Having been "homemaker for over 25 years, I commenced to worry, "Are those young folks getting enough to eat". From then on they were invited to dinner, supper, breakfast and in between as often as they could come. Being book-keeper, partsman at the garage, housewife and seamstress I often ran into too much work and too little time during the canning season. What a boost Lucy gave me when she came walking in and helped. A belated "Thank You", Lucy, just thinking about it.

The summer was soon over and the McClures returned to Ames for more study. The second summer was a repeat of the first with more demands for Elliott to talk to clubs and other meetings. He was a big help to the Bird Club in Atlantic.

With all the boys trailing after Elliott and nothing to do to keep them busy he remembered his days of Scouting as a kid. So after several meetings with a bunch of Lewis men, he went to work on the problem and did the ground work for a Scout troop. Soon Lewis had a very live and eager group of boys in Troop 66 Boy Scouts of America with H. Elliott McClure as Scoutmaster.

The third year when the McClures returned, Mother K came with them. She and Elliott put in many long hours and days on his thesis that winter. In January a new member joined the family - Lucy Jeanette, a wee little girl which Frank and I adopted as our first grandchild. How we did enjoy that baby????

When Jeanette was just a few weeks old, Elliott and Frank decided to have an oyster supper for the Scouts and the Committee after the boys had passed one of the milestones in their Scouting. Lucy wanted to help, but that was no place for a tiny baby with boys who might have colds, etc.

We had a young couple, school teachers, rooming with us, so we asked them if they would help. Much to our surprise Kay Speece had never touched a baby and didn't know that one could not sit up. All went well until Jeanette woke up, we missed out on the fun, but Roy kidded Kay about her attempts with the baby. As he was from a family of eight children, he took over and soon had her rocked to sleep (And seemed to enjoy the job).

When spring came Lucy, Elliott and our baby departed for Ord, Nebraska to a new job. How we did miss that little Gal????

In June 1942 we received the news that another new member had been added to the McClure family, Clara Ann. We never had a chance to love and spoil her. Sorry Cam, our loss.

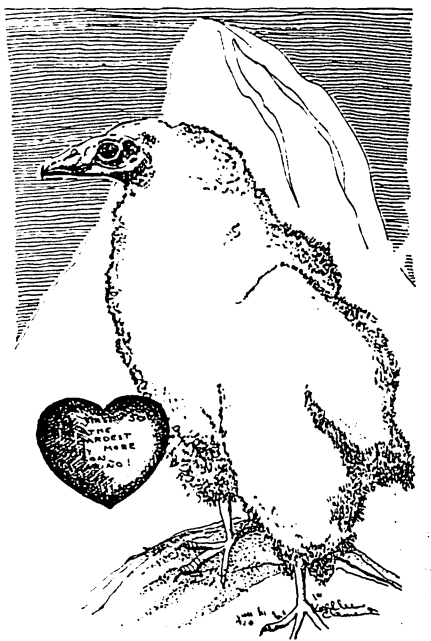
Through the years we have been many miles apart with only a few brief visits but Lucy, Elliott and their family have kept as close to us as though they were part of our family and have been to us.

I hope that your anniversary will be as happy an event as I had on July 31st for my 90th birthday when 225-250 friends came to wish me a Happy Birthday. Left me up on Cloud Nine.

Dear Lucy and Elliott:

May the Lord bless you with many more years together and Good Health. Your friendship and love mean a lot to me since I am alone. Love - Ethel Margaret Berry

As a teenaged babysitter, Kathleen Clements in Ord tried to keep Jeannette and Cam on the straight and narrow. She is a famous artist with her studios in Mexico City. Her remembrance was this sketch of a bird!



Many are the stories in which Bob Marks, the kid across the street in Ord figured. He, Shirley, Lucy and I still had good times when we could get together.

Happy 50 YEARS. Gosh, I didn't realize how "Newly wedded" you were when I first met you on So. 17th Street in good old Ord, Nebraska.

When I received the announcement and the plans that the girls had to put together a book of cards and notes, as you can imagine, there were thousands of thoughts that went through my mind.

I remember things like helping to paint the basement walls. (I frankly don't remember that episode with a lot of enthusiasm, however) I remember riding in the old red truck as we counted pheasants and doves, etc. I also remember the time the snake in the jar of formaldehyde fell on the floor and broke. Elliott drove with his head out the window and I rode on the front fender.

I also remember being stuck in the mud and walking some 7 or 8 miles to the Refuge Headquarters at Valentine, Nebraska one night. I remember eating those cans of hot spam spread on crackers for noon lunches, again in the famous old red truck.

Elliott with all of the things that you showed me and taught me, from wild life to Boy Scouts and back, I owe you a great big "Thank you". I would guess that probably, other than my parents, you had as great an impact on who Bob Marks became in his adult life as anyone on the face of this earth.

Do you remember the nights that we lay out on the grass in some pasture while you taught me about the stars? I passed that on to a son who also became an Eagle Scout. I think because of you I became a Scout leader while I was in the Army in Japan and again I was Troop Committee Chairman while our son was active during the time we lived in Michigan.

Three years ago, I had the good fortune to help you celebrate your 70th birthday.

How lucky could we get.

You had your magic spell on my children (and my wife). Tom still remembers walking with you through the University of Nebraska Museum and bringing home the model dinosaurs. Our daughter, Jean, still has one of those little Japanese music boxes that you gave her hanging from the switch to her bedroom lamp.

Do you remember the fun we had catching the deer flies and looking to see how many stripes they had across their eyes. We called them corporals and sergeants.

Thank you, Lucy and Elliott McClure, for just being you and for being such a part of the Marks family's lives. Happy 50th Anniversary and many happy returns. We wish that we could be there to wish you well on YOUR DAY, but you know that we will be there in spirit. Shirley and Bob Marks

The Miskos were the lawyer family next door, in Ord, who had the rambunctious goats.

"Mc Clures et al - The first of a long list of funny things happened the night the McClures moved in next door to us. It was dark, a light was on in the screened porch next door and a man was moving heavy boxes of books about, accompanied by a string of "Blue" invectives! John came home, threw down his hat and said, "Well, I think I'm going to like our new neighbors". And we did and still do, and their girls, and their mother who later became John's secretary. Much love and congratulations to you all - we wish so much that we could make it to the party.

Love, John and Maelee Misko.

The war years introduced us to the Reuther tribe and Ronald reminds us of a few moments in Bakersfield, California. His work at zoos across the country is well known.

Congratulations on your 1st Half Century together -it's something to cheer about and puts you into a small, but lucky minority!

You have had a lot of enjoyment, excitement, some heartaches, and now some relaxation and contentment. And you have given support, enjoyment, and pleasure to many others.

I can well recall the day, about 1944 when my Dad and I first met Elliott as he was looking at insects and birds in the shrubbery approaching the San Francisco Zoo. The friendship and association that followed was stimulating, enjoyable, and interesting and no doubt played a major role in the evolution of my life.

The San Francisco Zoo, Carey Baldwin, and the Reuthers became familiar to you. Elliott and I began making trips all around the Bay Area - to fun and interesting places - on weekends by Mare Island Navy Buses! and by U. S. Navy jeep on work days collecting insects and observing nature under every bridge, big and small, throughout the North Bay. Then the McClure family came to live in Vallejo in the same tract that we lived in - and we met Lucy, Jeanette, and Cam. Mom and Lucy got along well as did the kids, while Dad and Elliott served in the Navy - Elliott fighting the "battle of the islands" - like Mare, Treasure, North and Terminal!

Then the war ended and Elliott arranged to have me work as an aide with him and the Hooper Foundation in Bakersfield and Lucy generously let me join the family in the "cabin on the Kern" for the summers. We had great times working hard out in the field during the hot summers and swimming in the icy river in the evenings and on weekends. I felt like a pioneer in the wild west! The whole experience I recall with affection and warmth - aside from the weather! It was a great experience - including our bird trapping, banding and observations; our wading through all the swamps and reservoirs in the southern San Joaquin Valley; and climbing all the trees that had nests in them and sometimes being clobbered by birds above from front and rear!

Then because of Elliott and the experience I had gained, Bill Hammon asked if I wanted to go to Japan to do similar work in the summer of 1949 - did I?! It was fabulous and exciting - a never to be forgotten experience for a 19-year old boy. Then again to Japan the following summer, this time with Elliott and Clark Johnson arriving just as the Korean War broke out. This was another fabulous summer with our seeing and doing much more than most people while we worked and played in the Tokyo area.

Since then, we've corresponded, enjoyed your Christmas letters, and infrequently visited in various parts of the globe - Cleveland, Bangkok, and now Camarillo and Simi Valley.

Mom would have enjoyed being with you on this occasion. Dad, Phyllis, Lance, I and our families are grateful to call you very good friends and to continue the association.

We join all your many friends and family in your celebration.

With much affection and appreciation - Ron Reuther

Harold Hansen staggered in to Mare Island, California from heavy duty overseas. It was a birthday party for him that produced the ants and cake story.

Congratulations to you on this most memorable of occasions! How I wish I were there to join your many friends in their direct good wishes to you; I will be with you in spirit, you may be sure.

I remember with deep gratitude your many kindnesses to me during my "homeless" days at Mare Island - the way you took me - and others - into your warm, friendly home. And my annual contacts (at Christmas) with you would confirm that you have continued to similarly embrace others in the thirty - nearly forty - years which have elapsed since then. And all of us can say "Our lives are richer and fuller because we know Lucy and Elliott!"

I live at the lake much of the time - just a few miles from the Wisconsin National Audobon Camp - I thought of you as I wandered the trails over there in July. Aren't you due there soon as a guest lecturer?

Again - my very best greetings to you; I wish you many additional years together. With sincere affection -Harold W. Hansen

During our Bakersfield days Dr. Wm. McD. Hammon tried to guide me in virological research, but instead whetted my appetite for the tropics by his

tales of his missionary work in Africa. He has retired as a world-renowned virologist.

It must have been about 1943 (40 years ago) when we at the Hooper Foundation for Medical Research were fortunate enough to find a freshly graduated PhD with interest in a dove colony to lead the ornithologic aspects of our encephalitis studies in the western States. It turned out that he also had been husbanding a fine, patient, sympathetic wife for about ten years. So, behind a very good man, as usual, a good woman.

Congratulations to both of you for fifty years of love, children and families in a great variety of countries and circumstances! One of my more vivid recollections is delicious duck teriyaki in your home in the Tokyo area.

Your great Christmas letters of the travels, adventures and successes of another year remain treats to be both savored and anticipated.

Your contributions, Mac, to youth and to conservation groups are outstanding and have meant great sacrifice in research time, but behind it all has been a patient, sacrificial and undoubtedly, at times, a very lonely helpmate. So, the two of you as a great cooperative team for fifty years have shown many, how to succeed!

So, again, congratulations to you both. Come and see us sometime in Florida. Hoping you many more happy years - Bill and Helen

P.S. This is written in Pittsburgh at our daughter's home. She lost her invalid, diabetic, husband whom she dialyzed nightly for about the last two years after complete kidney failure. This was in July. We came here to look after Susan and the home so she could visit with her brother in Honolulu. You may also note that I have no typist and thus, have done a poor job.

During my years in Tokyo without Lucy and the family, I joined a Folk Dancing group among whom was Bob Ryan. He and I climbed, with others, the erupting Mt. Mihara. A man with a steaming hobby, locomotives!

Belatedly, and we hope not too late for the festivities, we take word processor in hand to contribute to the general chaos we are sure prevails. Ours is a two-phased recollection - Bob's from the 1950s in Japan, to date, and Nancy's during a delightful overlap of mutual assignments in Bangkok.

Some memories fade - others do not. In a mix of styles ranging from stream-of-consciousness to the New Yorker, here goes.

Doc's beady eyes behind those cinemascope glasses, holding forth on nature stories in the Dai Ichi; a mutual trip to the Pearl Farms when the ferry boat was dispatched for approximately a 200-yard journey with the pomp, music, ribbons and panoply worthy of a sailing of the QE2; assorted tramps in the woods while being regaled with tales of army ants (Army Ants???in Japan??); Doc putting cream and sugar in Japanese green tea (I still shudder to write about it, and my discs gave a bit of a belch at this); the letters from the observation tree in KL (those were classics); education in vectors, hosts and at least some comprehension of Doc's *raison d'être* for his relentless pursuit of our feathered friends, if not worldwide, at least Asia-wide! and the B-52 sized hornbill guarding "maison McClure" in BKK which, on a head-on course could strike terror into the viscera of any kamoy, to say nothing of

house guests. Then we wondered how the McClures managed to acquire a Toyota in the days when they were considered dogs, rather than the sought-after rolling stock of today (and, if memory serves, we had "a puzzlement" as to why the tiller was on the port side when it came from a right-hand-drive country (Japan) to a right-hand-drive country, Thailand.

But there have been the occasional visits when we in Washington are granted a landing, instead of a fly-by - visits which we always cherish. We have known Doc and Lucy now for more decades than we, in prudence, care to tote up. Bob since the early 1950s, Nancy since the 1960s. They are among our favorite people, and we intend to hold them in that status. We wish them all the best for their bicentennial--no that's not right, semidemicentennial or whatever, and whatever the appropriate metal of recognition of fifty years is, (Au,Pb,An,???).

Our equivalent of the Order of the Million Elephants to you at this time; all the best to you both, and expect our next communication before the 75th.

Bob and Nancy Ryan

And of course there would be word of Yoshii who was so important to me and who appears in so many of my stories. Now director of the Bird Migration Research Center in Tokyo.

With many thanks and a lot of joy, I received your letter entitled "A Half Century Event". It is my genuine pleasure that McClure and his families are all in good health.

I believe that your parents are so happy specially because they have such excellent daughters and their partners. The Yoshii's case is quite different. Yesterday, none of our family noticed that it was the thirty-sixth wedding anniversary of ours. On the table of the supper, instead of luxurious foods, only a cup of cold noodles (hiya-somen) and several pieces of salmon were served. We, Yoshii and Teruko, began to eat, receiving no sound of celebration from anyone. A little later, I muttered, "Today is our wedding anniversary", but my wife's response was only "Ah-so" (which is a favored word of our Emperor Hirohito) and that was all. However, I should be satisfied because she kindly took a can of beer out of icebox and we made "Kanpai" (=toast) with it. A Japanese proverb says, "Nothing happens being happy". We might be happy, but are quite different from the McClures' case.

Now, a scene in the remote times comes up in my mind. It was the day of farewell when we sent your parents off at the Yokohama Pier. I presented them a music record entitled 'La Cinquantaine - Golden Wedding Anniversary' by Gabriel Marie. Through the music I intended to convey our genuine hope for the everlasting happiness and health of the McClures. Now, I am very glad to know that our hope becomes exactly realized as we wished. It is great for Dr. and Mrs. McClure but also for us. By the way, how is the record now, I wonder. Probably it had already been broken and disappeared to somewhere. Never mind. The good memory will never disappear from our mind. I am looking for another record for McClure. The title be not the same, but should be "Diamond Wedding Anniversary". Would you help me to find the record? If you cannot do so, I have to buy a Japanese record entitled TAKASAGO which celebrates the happiness of one couple who have one hundred years' longevity. Don't say too much!

Yours sincerely,

Masashi Yoshii

John Masuoka, now a prosperous business man, was the youth who made Boy Scouting in Tokyo an international activity.

Thanks for your letter. Sorry for not writing in a long time. Congratulations on your 50th anniversary.

When I think about it the first time I met you was when I was 15 years old in the 8th grade. Since 30 years ago many things have happened to me. Today I'm an insurance agent. I don't remember much about 30 years ago from now, but I do remember our boy scout experiences together. I recall meetings between your troop and mine about urashima taro and learning English from your mother at your residence in Washington Heights.

I want to come and see you, but I'm sorry I don't have the time or money. But someday I hope I get to see you in the future and I wish you and your family much happiness.

Miyuki Henderson joined us while we were still in the U.S. House in Tokyo. Hers is a long story that I should have told but she reviews it here very well!

Dear Dr. and Mrs. McClure,

The year was 1952 at your home on 495 Shibuya, Tokyo. The McClures: Mrs. McClure, Elly-san, Jeanette, and Cammy; were such a wonderful, kind family. They treated me like I was one of the family. I have so many nice memories I don't know where to begin.

The first time I met Mrs. McClure was at a cooking class. I had just gotten married and was attending a bride's class at Chapel Center in Tokyo. Four other brides were in the cooking class. We visited your home and you taught us how to cook. You are a very good cook. Do you remember you asked us what we would like to know about cooking? I said I wanted to know how to make corn bread. You said that we would make corn bread in the next class but I missed that class because the taxi driver and I couldn't find your house. But now I make very good corn bread.

When my husband was in the United States and I was living alone in the apartment your family was kind enough to ask me to come and live with you so I could learn about how to run an American household and about the American lifestyle in general. Mrs. McClure and I went to luncheons at the church where I met all kinds of people and once a week we went to a delicious Chinese restaurant. I had a wonderful time with you.

Elly-san, are you still eating shredded wheat and peanut butter sandwiches? I remember you eating shredded wheat every morning for breakfast. I bet that's why you're as healthy as you are today.

One day Mrs. McClure invited a friend to dinner. We all sat down and the table and Micheco-san had cooked a delicious dinner and set the dishes in front of you. You served yourself and didn't pass any to us. Mrs. McClure finally asked you to please pass us the dinner and you did.

Do you remember the summer at Shibuya when we went to the Japanese square dance? Jeanette came in second or third among a bunch of Japanese people because she danced so well! We also went to an American square dance. Elly-san, you danced very well. Do you still dance?

We also went to Nikko and had such a good time. Jeanette and Cammy, do you remember swimming at the Mieji pool? We rode the bus to get there and you two girls were always fighting with each other.

Every Sunday we went somewhere as a family. I enjoyed that time together so very much. We had a nice Thanksgiving and Christmas with all your nice friends. I had such a wonderful time with your family. I will never forget your kindness. I really felt like one of the family.

When I was waiting for my husband to come back from America you helped me to arrange my wedding at the Chapel Center in Tokyo. We had found out that my marriage by proxy was not legally acceptable in America so that's why we had to get married twice. Can you imagine this was in January, 1953? You all made a beautiful wedding cake, but my husband's ship was late because of a typhoon. The cake and I became a bit anxious but Elly-san assured me that if the ship didn't come soon Henderson would swim ashore. He finally did come and we were married in the Chapel Center and Elly-san gave me away. We had a nice wedding reception at your home.

My husband was assigned to Kyushu Island and I went with him. I thought it was a terrible place so I stayed one day and came back to your home. You told me my place was with my husband and sent me back to him.

I wish you a very nice 50th wedding anniversary. I still feel as if you are my family and I'll never forget your kindness to me. I promise I'll come and visit you all in late February or March.

Love, Miyuki

Bob and Renee Traub were involved in two of the episodes in our lives, at University of Illinois when I wanted to go to Mexico with Harry Hoogstraal and them, but couldn't raise the money, and in Malaya where he was commanding officer of the U.S. Army Medical Research Unit. He is a world authority on fleas.

When word reached us about your impending Golden Wedding, we felt that there must be some mistake, because graduate school at the University of Illinois was surely only 15 years in the past and our joint sojourn in Malaya occurred only 10 years ago. However, brief consideration of all that the McClures have accomplished and of the many parts of the Far East in which they have resided, soon convinced us that 50 years must be correct. Besides, our own 45th Anniversary is coming soon, and that period seems like 75 years!

The multitude of letters of congratulation you are receiving must be full of reviews of the tremendous volume and high caliber of Elliott's scientific achievements, and to Lucy's contribution thereto, and attest to the many firm friendships made in so many scattered parts of the world. It takes a special grace and knack to fit in so well to such diverse cultures, especially in those times of social change and often political stress. Perhaps you should become permanent global travellers because virtually everywhere you choose to go you could be welcome guests of a friend or colleague

(terms that are synonymous in your case).

Of course the birds may feel differently if Elliott became active again in remote places, because for decades no bird in the entire Asiatic-Pacific area could feel secure in its privacy or safe from nets and snares and attendant indignities such as having one's feather ruffled, and being dusted with desiccants, and then banded. You would have to take special precautions to prevent the Russians from once again becoming frustrated by failing to collect a bird that had not already been banded by Elliott McClure or one of his teams.

It was heartening for us to learn how successful Elliott was on his recent trip to Malaya and Borneo. It all sounded like old times, except for the dreadful environmental changes wrought by man (and now the drought). The devastation of the forests in Asia, New Guinea, South America, and Africa must be an important contributing factor in this horrendous series of droughts, and if Elliott and others like him can persist in their splendid efforts towards conservation, perhaps the trend can be stopped, if not set in reverse.

Renee and I greatly regret that we cannot attend the Golden ceremonies. It is impossible to adequately express in a letter, our love, admiration, and respect for you both. We send you and the family every best wish, and Jeannette (ours) and Roger join us in this, and in the hope that we will soon see you again.

Sincerely yours, Robert Traub

Following the Traubs, Hinton and Mary Baker took over USAMRU at Kuala Lumpur. He developed many innovative approaches in our field work and upon retirement moved to Washington State to raise small fruits.

Congratulations to both of you for creating such a wonderful family. Evidence for your success is Cam and Jeanette who give you such a meaningful party on your 50th wedding anniversary.

Thanks for developing our interest in birds. Friends here join us in wishing you happiness together through the rest of the century. Wilson's warbler is busy at bugs in the vine maple beside the window now. Swanson's thrush is often in these trees. From May to July we hear them early in the morning and at dusk. A pair of western Tanagers nest in the forest here every June.

Golden-crown kinglets and Ruby-crowned kinglets, Pigmy owls, Short-eared owls, and Great-horned owls are here in winter. Even a Spotted Owl has been seen flapping slowly through an opening in the forest at dusk. Pine Siskins form gyrating clouds over the fields in winter.

Last week five Ruffed Grouse flew from a cleared area into the forest. They were feeding on ripe blackberries and perhaps Oregon grape (Mahonia berries). Last Spring a pair of Mallards and a pair of Harlequin ducks nested on the edge of our southwest pond. Where some basins had been dug to hold winter and spring water, a pair of sandpipers were running along the water edge. Even a Greater Yellowlegs mistook our mist net over the strawberries for shimmering water and came to land beside it. We put a shallow pan of water near him and he walked over and stood in it several hours before leaving for Alaska. While picking our berries this summer we heard the Band-tailed pigeons cooing in the conifers.

Here are Hairy Woodpeckers and Pileated Woodpeckers, Bald Eagles, Red-tailed Hawks, and Coopers' Hawk. A couple of Cooper's Hawks looked like pretty

inexperienced hunters a week ago. They sat on the rails over the blueberries. They seemed to be thinking that's where the Robins should be. There wasn't a robin anywhere in sight for three or four days. Last year the American Kestrel spent July and all the Robins left for the most of the summer.

On the first Winter we had a pool of domesticated Mallards near the house. A Goshawk from high on the mountains came down and perched on a log near the duck pond. That gave the ducks a stir. The hens dove under the water, the drake and hawk had a dramatic confrontation for a few seconds until I shouted from the windows. The hawk left for the Douglas fir. The Goshawk is a magnificent bird.

Lucy and Elliott, sometime before you celebrate the 100th come by to see us birds.

Hinton and Mary

The USAMRU was housed in part of the Institute of Medical Research, IMR, in Kuala Lumpur. The two biological giants downstairs were John Harrison and Ralph Audy. They had two assistants who in turn developed fame for themselves, Lim Boo Liat, a mammologist, and M. Nadchatram, an acarologist. Nad is now professor at the University of Singapore.

I received Cam's letter of announcement of the important event and I was honored by the kind request to participate in the auspicious celebrations by contributing a message. Buried in my new teaching commitments I overlooked the dateline. I discovered to my dismay this morning that I have failed to meet the dateline for what has been planned for you by your children.

During the 34 years I spent at the Institute for Medical Research in Kuala Lumpur I have met many American, British and Australian scientists who have worked in Malaysia for various periods of time. I can truly say that you are among the few that will be remembered with kindness and appreciation for your pleasantries as well as for your notable contributions to Malaysian biomedical science and concern for nature conservation in the country and region. Your unique qualities of being able to understand and respect the feelings of people of all walks of life, a very important aspect of life, has been one of your outstanding characters. I am glad for this opportunity to speak my mind.

Some of the things I remember vividly are the trip to McClure's treetop platform in the Gombak forest, trips to Rantau Panjang, Fraser's Hill and the trips to Cameron Highlands on numerous occasions as one of your assistants in the bird banding project, and our exciting discovery of *Leptotrombidium scutellaris*, the common scrub typhus vector of Japan, on the Grey-headed Thrush. This is in a small way an illustration of the importance of the massive MAPS project in Asia which you initiated and successfully completed after some 20 years of hard work. The results of the study will remain a masterpiece for a very long time. In my lectures to students in Malaysia and now in Singapore, I bring up the importance of your work on migratory birds whenever the epidemiology of vector-borne diseases are discussed.

Your active involvement in the creation of the Malaysian zoo and your valuable contributions to Malayan nature as a council member of both the MNS and the Zoo Society, and subsequently as President of MNS are indelible marks that you left behind. A road that bears your name in the zoo park and the conferment of Honorary Member of MNS bear testimony to your inherent love for wildlife and nature. I must say that you have accomplished much and given much more.

It has always been a pleasure for me to meet and talk with Lucy, a very graceful and charming person that she is. How can I forget the numerous times my wife and I visited your residence in Federal Hill to savor and devour the American food that Lucy served.

I feel very humble and proud to have met you both and your charming children. Though I have not kept in touch I have always looked forward to your newsy X'mas letters year after year to keep in touch with development in the McClure family. I wonder if Cam and Jeannette would remember the steep climb to the source of the waterfalls in Templer Park, off the beaten trail. It was hazardous then, but rather adventurous in reminiscence. I feel very proud to be a friend of the family. My association with you and having worked as your assistant from time to time has proved to be rewarding for me. It is hard to believe that 25 years have passed since I met you in 1958. I can imagine how exciting life must have been for you and Lucy over the 50 years. Inadequate as I may be in my expressions of goodwill on an auspicious occasion or event in the lives of two fine people I respect, I take the opportunity and privilege of extending my warmest best wishes to you both who have grown in contentment for 50 years, plus great charm and humor. We wish you both more joys and even greater contentment from the very beginning of your next 50 years and live to enjoy more grandchildren and great grandchildren. I wish also to take the opportunity to extend my very best wishes to your proud children and their spouses.

It is almost 6 months since I came here on a teaching fellowship and it is a new lease of life for me. The University takes good care of the staff and I am very happy. Working with young people is much fun and excitement. However, my family is in KL as my son, Santa will be sitting for his final high school examination. Hopefully, he will join me in January. My daughter Indra is 16 years and exactly one year younger than her brother. We would like to have her finish her high school education in Malaysia too before coming to Singapore to her pre-U like her brother. My wife, Mahes prefers to remain in KL for 4 more years when she will be able to retire with benefits.

I teach terrestrial arthropods and vector-borne disease epidemiology for final year students for the BSc degree. I would not know of my commitments for the second semester, but the Departmental Head is supportive of my intentions to write a monograph on ticks and mites of Malaysia and Singapore.

Cordially - Nad (M. Nadchatram)

Upon returning from our World trip in 1962, I urged Col. Baker to utilize the radio tracking techniques for mammal study that I had seen in Illinois. Dr. Glen Sanderson came to develop the technique for us and brought his lovely wife, Beverly. He has been director of Energy and Natural Resources of the Illinois State Natural History survey for some years.

Do you realize that I followed you to Champaign-Urbana, to Iowa, and to Kuala Lumpur? But not in that order. Of course, you had many, many side trips that we did not make. Now I wish we could follow you to California for long enough to help you celebrate your 50th wedding anniversary. In this day and age it is unusual to find couples married to each other for 25 years, to say nothing of 50 years! It is a credit to the both of you that you have reached this point seen by so few.

There are many things that could and should be said, but I was never much good at that kind of thing. However, I can relate our experience in Kuala Lumpur 20 years

ago and how both of you contributed to the satisfaction and enjoyment we still recall from our brief visit. Not only did you make us welcome in your home, but because you are you, you knew practically everything that was going on and were invited to participate in them--we were included even though we were strangers. Beverly still tells about someone who had been there for 4 or 5 years being amazed about something we had done or where we had gone because of you. The other person said that she never heard about or had the opportunity to do the things that we had done in a few brief weeks. Among other things, we recall dinner with Hussein (sp?), visiting Busu at his house in the forest, the 9-course dinner before we left for home, plus many religious and other festivals and "doins" that we attended because of you. I haven't mentioned such things as netting birds, trapping rats, a visit to Elliott's tree, and other items that were more in line with the reason we were in Malaya. These activities were never routine for us because of your interest and enthusiasm.

I am pleased that we have maintained a working relationship since you returned to the states. The offer is still open that we will help in any way we can. Our very best to the both of you on this happy occasion and keep in touch so that we will be invited to your 75th! By that time I will have retired and perhaps we can be there in person.

Sincerely -- Glen and Beverly

Until they visited us from Bangkok, Ralph and Mildred Buchsbaum were known only by correspondence. Not only known as a great teacher, he is much quoted from their expansive text, "Animals Without Backbones".

Looking at the picture above, where we now live and have been since 1972, we are reminded of the house we occupied in Thailand in 1959-60. We were surprised and delighted to find the McClures there when we returned to Thailand for a visit in 1970! We were astonished at the inhabitants--besides the McClures--there were birds everywhere; we remember especially the little owl in the wastebasket.

We remember the McClures vividly in Kuala Lumpur when we drove down from Bangkok. You were surprised that we made it. I remember that you appeared at Chula University in an open car, dusty, and told us you had come from Malaya. I assumed you had driven in that car. If you could drive to Bangkok, I could drive to Kuala Lumpur! Well, we had some adventure. But it was well worth it. You treated us to some exciting times, especially that visit to the forest (no tigers, but I did get a land leech to photograph; the land leech was on me).

There are many other memories... such as our mutual association with the Defenders of Wildlife...

Mildred and I have celebrated our 50th on June 14, 1983 so we were not the only "foolish ones" that our friends called us in 1933 for getting married in spite of the "great depression". We had our children (Monte and Vicki), their spouses (Sherry and John Pearse), and our grandchildren: Brent, 12, Brandley, 9, and Devon (Pearse) 9. And I gave Mildred a new wedding ring (the old one wore out) which should last the next term--50 years.

Lucy and Elliott: we wish you and yours as much joy and time as possible for your second half-century together.

Love - Ralph and Mildred

Until he came to Kuala Lumpur to entice me into the MAPS program, we had not known Dr. Charlie Barnes. We did not always agree, but he eventually turned MAPS over to me and went on to great things in space and satellite work.

Congratulations! We don't know how, Lucy, you have put up with the bird watcher for all these years! Persistence and stoicism must pay off. We just hope that you find him at home at least part of the time on this day, your 50th anniversary. There's no need to say all of the time because, knowing Elliott, he probably was "up with the birds" investigating that new or peculiar sound just before dawn.

Anna and I often talk as we get older about people who have influenced our lives--and perhaps not ours alone--but that of the whole world. The McClures certainly fall in that category as far as we are concerned. I first met Elliott on a Friday night upon my arrival in K.L. from Washington. I had thought that this might be a dull weekend in Malaysia but Elliott said that he was climbing "his tree" the next morning and would I care to go along? I didn't realize that his tree was the mammoth of the Malaysian forest. I distinctly remember that as I sat at the base of the tree looking up at what I could see of its top and later as I held on for dear life climbing the ladder and finally hoisted myself onto the platform itself I exploded with a query "what in the hell am I doing here?" I could have been safely in my hotel bed or having a tall one in some cool spa!

From then on our relationship has just grown and grown and our whole family has become intrigued with birds and their habits particularly when nestling herons let it all fall out when they are being banded. We became acquainted with mites and chiggers and diseases that they carry. Charlie's "travels with Elliott" took him to the rarest places of northern Japan, Borneo, the mysterious temples in Thailand, the highlands of Baguio, Phillipines, vegetable gardens of Hong Kong and China. Charles says that everywhere he went with the "red headed, green eyed devil" the Chinese children ran from us screaming Tang! Tang!

In all sincerity, we consider this Chinese demon as one of the most gentle, loving, heart warming persons we have ever known, along with his good wife standing beside him and supportive of all his good works.

We know that we all have our little niche in life--perhaps we have found ours--but yours is different--it's as big as all outdoors! We will never be the same for having known you two. We believe that the world is only now beginning to recognize the personal and scientific contributions you have made, particularly to Asia. We look forward to a visit hopefully this next year when we can share with you again the hundreds of sweet memories that we cherish.

Our best wishes to you on this special occasion.

Charles and Anna Barnes

P.S. Charles now working as Supervisory Veterinarian, Central America, Panama, and Colombia.

Nancy Greene appeared on our horizon in Bangkok as a teacher, linguist and feminist deluxe; and she and Richard became avid bird enthusiasts. Many fascinating hours with her at Khao Yai National Park.

Congratulations and love from the Greene's!

Lucy and Elliott McClure? Sure, we'll tell you about them.....where to begin? There are too many thoughts, memories and impressions to organize.....

McClure's funky house on Soi 15, an oasis in the midst of hot, steamy Bangkok....hornbill flying against the screen door then hopping back to do it again, catching tossed peanuts in midair.....owl in wastebasket in the McClure trophy room protecting an infertile egg against strange intruders, satisfied when chick appeared courtesy of weekend market, bewildered when chick fledges and leaves.....collections: artifacts, friends, memories, carvings, Japanese chopstick thingamajiggers.....always good food, conversation and science.

Khao Yai. How many times did we have the privilege of joining the McClures up there? Elliott the complete field man, resplendent in pith helmet, jodhpurs, and jungle boots, plus camera, umbrella, clipboard and other assorted paraphernalia.....Lucy comfortably ensconced in motel room, Lucy always supplied the cigarettes and scotch.....teetotaling Elliott graciously tolerating the vices of his inferiors while dispensing golden nuggets of natural history wisdom. An excellent teacher and great field scientist, a humanist and man of letters. We frankly are unable to find the words to express either our admiration for Elliott's accomplishments or our thanks for all he has taught us.....our involvement in science and natural history today is due in no small part to those fantastic five years in Bangkok with the McClures.....

The McCluremobile, built in some forgotten time when nobody had even heard of a Toyota (Toyopet?).....Friends of Khao Yai meetings.....Siam Society Natural History Section meetings.....enamelled brass pins designed and funded with McClure \$.....H. Elliott writing a documentary letter supporting Nancy's application for credit experience outside of college...resulted in 24 hours of biology credit toward BSEd in science.....wonder what the H stands for (?) Elliott's annual letter recounting another yearful of activity....trips, meetings, symposia, lectures, papers, visits.....a richer, fuller life one could not hope to have! Lucy and Elliott McClure should live forever or at least another fifty thousand years. The world needs them! We'll be thinking of you on 10-1-83.

Love - Nancy and Richard

Bangkok yielded another great friend, Katherine (Katey) Buri, a wealthy and dedicated conservationist and her husband, Dr. Rachit of Mahidal University. She drove the Royal Forestry Department to distraction trying to make the officials practice wildlife management and forest conservation.

It is a pity that I cannot find a picture of myself and your father-in-law during the happy times that we roamed Khao Yai National Park to send on to you, as a memento of the coming happy occasion. Khao Yai National Park is now in ruins from overuse and neglect, so it is just as well that we do not have the past to compare with the present.

My memory of Elliott is that of a happy buzzing bumblebee and from all I hear, he is still buzzing around and I hope for yet many, many years more buzzing. Seriously, though, I wonder how he predicted the existence of the steel in Pilai who when I first met at the open-bill stork nesting site was a happy Mai-Pen-arai Thai girl. It is due to his encouragement that turned her into a wildlife fighter. Though I myself have tried to produce or convert a Thai I have not succeeded.

Lucy is a gentle creature with great understanding and patience. Losing Elliott for two days and nights in K.Y.N.P. turned into a typical Ghai joke instead of one of self-pity. I shall always remember her face when she broke the news to us on our return from Khao Laem. I have since then managed to lose the Swedish Ambassador on a hike in Pluc Luang. The mist got him and he broke off from the hiking party, but managed to retreat down the mountain back to base. I was told off. McClures I could loose in one jungle, there are so many about, but not the "Swedish Ambassador". The disgrace was credited to the Siam Society and not to F.K.Y.N.P.

Greetings and fond memories from all of us in Thailand. - Katherine Buri

Rabor, known as Joe, is a name known to every ornithologist interested in Philippine birds. He, with goatee, an explorers hat, and mounted with sidearms looked the Sunda bandit and pirate! He and Lina who is the epitome of grace and beauty are world famous and loved by all who know them.

We fondly remember when:

Elliott came to see Joe at Silliman University, Dumaguete City, Philippines, to arrange for his being a member of the MAPS team in the middle '60's. Then, we transferred to Mindanao State University, Marawi City, Philippines, where he continued the work as team leader of Central and Southern Philippines based in Marawi City. This continued up to the early '70s when the project here was terminated.

The team leaders conferences held in different places in Southeast Asia like Bangkok, Kuala Lumpur, New Delhi, Bharatpur, Agra, Baguio and others were interesting and fruitful experiences for all of us who attended them.

Lina remembers, with nostalgia the enjoyable shopping trips with Lucy in the shopping centers of the various cities where the conferences were held and Joe and I - while the men were busy in the meetings! We reiterate our congratulations and best wishes on your golden wedding anniversary. Ours will be on April 16, 1986. We still have not lost hope of visiting you in 1984. Let us keep in touch. Lovingly

Joe and Lina

As MAPS was being organized, Sheldon Severinghaus of a well-known academic family was teaching French at Taichung University in Taiwan. We approached Dr. Paul Alexander to form a MAPS banding team which eventually included Shel, who went on in ornithology studying the Mikado Pheasant for his PhD dissertation. He is now active in Taiwan with the Asia Foundation. You know him from the tale about Palawan and here he presents another story.

I am sorry not to be able to write something suitable for the Fiftieth Wedding Anniversary Album that Cam and Jeannette are preparing for that Big Day on October 1st. I have tried to write something humorous and reflective, but my heart isn't in it. And what my heart is in, wouldn't be appropriate for the album. That is why I am writing you separately - a bittersweet story the point of which is to tell you, at this marvelous milestone in your lives, how much you have meant, and will always mean to me.

After I got the anniversary announcement in August, I began mulling over different things that might be fun to do for you, even crazy things like flying to California for the weekend. Ideas were beginning to ripen at the end of August and I was expecting that the final "inspiration" would come in time to get my words ("kind and unkind") to California by September 10th as requested. Then, on September 1st the Korean Airlines plane was shot down and with it a close friend of mine who was also a colleague and something like a kid sister. I have still not completely recovered. Both of you would have loved her, and she would have loved you. In reflecting on her life, I have thought often of you.

Her name was Lee Campbell. She was 28, bright, attractive, has a B.A. from Wellesley (Phi Beta Kappa) in biochemistry, and a D.V.M. from Ohio State. Unlike most vets who end up taking care of dogs, cats, guinea pigs, and the like, Lee wanted to apply her skills to captive breeding of endangered species, particularly large mammals. But she loved all animals.

Upon getting her D.V.M., she came to Taiwan in the fall of 1981 as a Luce Foundation Scholar, a one-year professional apprenticeship in Asia organized and administered by The Asia Foundation. I arranged for her to work as Research Associate in the Graduate Institute of Biology at Tunghai University. She began immediately to study deer farming in Taiwan and the harvesting of antlers in velvet for traditional Chinese medicine. She also got involved in a program to reintroduce the Sika Deer from captive stock into its former range. I was advising and working with her informally on the latter.

Although her Luce Scholars program ended in July 1982, Lee decided to stay on a second year to continue her deer work. She joined the University's Animal Science Department and went on the local salary scale. By July of this year, she had completed a \$75,000 deer research facility on the Tunghai campus and had purchased the first ten head of Sambar Deer. She decided to stay on a third year. During the summer, she went back to the States to see family and friends and to develop contacts that might have an interest in her deer research and conservation activities. One of the deer at Tunghai died in her absence. When she was notified of this in the States, she left immediately for Taiwan, several days earlier than she had originally planned. That total devotion to her animals and to the cause of conservation cost Lee her life.

There are many parallels in the opportunities, challenges, frustrations, and uncertainties which Lee faced from 1981-1983 and those which I faced almost twenty years ago now. Her field of research in Taiwan is as new and exciting today as ornithology was in the 1960's. Lee was single and anticipating a promising career but it was still unclear and undefined with all the uncertainties that go with it. She was an aggressive young American working at a conservative Chinese institution for the first time. She loved Taiwan and had already extended her stay twice beyond the original period. Her mission, fired by a sense of idealism and justice, was to preserve the environment for future generations.

I have not forgotten, and never will, those years when I was at Tunghai in much the same circumstances, seeing exciting opportunities for work all around yet not knowing quite how to proceed or which direction to take. Enter the McClures and the MAPS program. I remember feeling in September 1964 that I couldn't be so lucky as to arrive at Tunghai at just the time an international bird research project was beginning. It seemed too good to be true. Yet I worried about how I could get involved in it. Although I was pretty good at field identification of birds in the U.S., had a B.A. in zoology, and had taken ornithology, I had come to Tunghai with an M.A. in French Literature to teach French. That was a wonderful opportunity, but my heart was still in biology and conservation. Would the director of the MAPS program risk taking on a young kid whose career track then looked like the broken field running of a tail back? After all, the director of the MAPS program had reddish

hair and freckled skin - and those types are known to be hot-tempered and hard to get along with.

Then came the trip to the Philippines in February 1965. I was not a member of the MAPS team then, so I was just tagging along and felt a little uneasy as I went around with Elliott, Alcasid, Joe Rabor, and Paul Alexander. But I soon realized that Elliott was not such a bad guy after all! A sense of humor, always ready for a good laugh, and a fountain of information on birds and conservation in Asia.

About half way through the trip, Elliott and Alcasid began discussing the possibility of going to Palawan for ten days. Paul Alexander had to return to Taiwan, but I desperately wanted to go with Elliott to Palawan. Although I was still uneasy about being "excess baggage" as a non-member of the MAPS team, I got up the courage to ask if I could join the trip to Palawan. I distinctly remember that the final discussion and decision was made in the Manila airport upon our return from Negros. At that moment, I didn't know Elliott well enough to predict what he would say, so I was anxious. When it was agreed I could join, I was thrilled beyond belief, although I tried to remain outwardly calm and collected. In retrospect, of course, it would have been easy to predict Elliott's attitude because he has typically always given eager young people an encouraging boost. I have witnessed that many times since. I was no exception and now know how fortunate I was.

That ten-day trip to Palawan with Elliott was a turning point for me, and I have never been the same since. Elliott's cheerful welcome to me to join the Palawan trip was a big morale booster and encouragement at a time when I was feeling a bit uneasy and uncertain. Elliott also taught me the basics of Asian ornithology on that trip. And his frustrations about the destruction of the tropical forests fired up my own sense of mission to do something about environmental conservation. But most important, the great affection I have for Elliott took root on that trip. There's nothing like shared experiences (or should I say shared "adversity") to foster friendship. And we had plenty of both including diluted bat urine as drinking water, pig's intestines as a noon-time entre, jeepneys without breaks, pygmy Batacs right out of the pages of National Geographic, tipsy outrigger canoes, and bottle-nut chewing bus drivers using holes in the floor boards as spittoons. But the biggest adversity that Elliott shared must have been sharing his mosquito net with me one night. Would you believe that, Lucy? Any guy who would risk that has got to be something special!

Palawan, of course, was only the beginning. In the years after that, Elliott continued to offer me the encouragement and the challenge to develop in this field. Then I began to get to know Lucy. For me, Lucy, you were the calm, steady, unruffled source of comfort and hospitality in an otherwise frenetic world, particularly for stray dogs like me and, later, Lucia and me when we were homeless, itinerant newlyweds. Lee Campbell had a plaque in her bedroom which read:

We need to have people to love us,
People to whom we can turn,
Knowing that being with them is coming home.

The two of you were that to me. The two of you and what you did for me were in the back of my mind in the two brief years I knew Lee Campbell and particularly in the last three weeks. I spent many, many hours with Lee. If I provided her only a portion of the encouragement, inspiration, challenge, and comfort that you gave to me, I would be satisfied. It is such a terrible waste to lose this lovely and talented young gal, all the more so because she was a good friend committed to environmental conservation.

Life is a bitter-sweet affair. Lee's death is the bitter side. The celebration of your 50th wedding anniversary is the sweet side. The coincidence (more or less) of these two events has provided a poignant opportunity for me to reflect on the meaning of

friendship. You both have given me an abundance of that and set an example in so doing. I send you all my love and good wishes for the Big Day and for many more to come. Lucia joins me in these sentiments. Next summer, we will be back on home leave in the States and count on getting together with you. Please keep us informed of your plans.

Cheers, Shel

During the party, Shel called us at Cam's and we had a chance to talk with him and Lucia!! Les, his father, also called from Florida!!

Dr. K. C. Emerson was influential in Washington in maintaining support for MAPS and as he is a world authority on bird lice, Mallophaga, we shipped our collections of these insects to him for identification. Other ectoparasites collected by MAPS went to other scientists.

After I had dinner with you and Elliott in Bangkok, I went back to my hotel by a taxi. The taxicab driver said, "Mrs. McClure is the nicest lady I know". That's my memory of you, Lucy.

Elliott, I hope to be as active as you are: when I get your age. And I'll never, never know as many key scientists as you do; so I envy you for many things.

Congratulations to both of you for a long useful life together and it has been a real pleasure to know and work with you. Let's hope we will all be around for the 75th wedding anniversary.

With best wishes - Sincerely, K.C.

The first time that I went to Australia to interview bird-banders (some of the Asian birds go as far south as Australia to winter), I was told to meet Pauline Reilly who was doing an intensive study of Fairy Penguins. She has continued an ornithological research, participated in the writing of the massive "Atlas of Australian Birds" and is writing children's books about fascinating Australian creatures.

In the early 1960s, the mighty H. Elliott McClure swam into my orbit. I awaited his arrival at my home in suburban Melbourne (Victoria, Australia to the uninitiated) wondering what this American, famed throughout southeast Asia for his bird-banding and associated activities, would be like? I had captured him to speak at a conference and now, there he was walking up the garden path. Amazingly, he wasn't ten feet tall - just a sandy-haired male of infinite friendliness and patience. I succumbed to his magic and watched as others also fell under his spell.

There were later meetings accompanied by Lucy whose infectious charm likewise enchanted my husband (Arthur) and me. At the end of winter 1971, they joined me at our cottage in the bush at Jamieson. With water in their veins, they suffered agonies of cold despite my perspiring efforts with fires. Traveling in a car with Elliott was a staccato exercise. Windows sealed, heater full blast, then Stop! He'd leap out, doors ajar, to snatch up a road-kill, snip off the relevant feathers, then crawl back miserably inside the car. When we returned to Melbourne, the air conditioner worked

overtime until an ominous rattling like a loose screw called a halt. Icicles were hitting the fan! The McClures surely had a strange effect on our weather which rarely goes much below 5° C (40° F) even in the coldest winters.

In 1974, the Reillys and McClures traveled to the Hammersley Ranges in northwestern Australia to stay with Scott (son) and Sue Reilly. Arthur and I slept on the ground leaving the campervan to our guests. We giggled to hear the nightly struggles of little Elliott and Lucy trying to settle themselves in sleeping bags in the cramped confines of the van. As we traveled, Elliott fascinated us by his shrewd comments on the ecological scene and his damning indictment of over-grazing and neglect of our beloved country.

The parting at the end of that holiday was a sad one. Elliott was not well and we feared for his life, unaware that a bunch of germs stood no chance against him. Each year, we relish the McClure Xmas letter and toy with the idea of a US holiday, largely with the idea of renewing acquaintance. I'd particularly like to look at some of Elliott's manuscripts which he assures me no publisher wants - the popular version of his scientific papers. I know it can be done because I have just had my popular version of work on fairy penguins published. And of course I shall have to bring a copy to flaunt in his face.

We hope you have a wonderful brawl on 1 October. We are proud to be numbered among Elliott and Lucy's friends and wish them well on their Golden Wedding Anniversary.

Pauline and Arthur Reilly

Pilai and Somtrakul had labored over thousands of slides of blood films from birds all over eastern Asia to determine the incidence of avian malaria and other parasites. The rest of the staff and I had compiled and written a book on ectoparasites and one on migration in Asia, but the malaria work remained incomplete. Thousands of slides were sent to Dr. Marshall Laird for positive identification by him and his staff. In this we encountered Dr. Ellis Greiner of Memorial University of Newfoundland, and a malaria book resulted.

50

LUCY AND ELLIOTT MC CLURE
1933 - October 1 - 1983

6 Oct 1983

Dear Friends, Relatives, Associates and Celebrants:

Well, the big day has come and gone and we are entering another cycle. People tell us that the next date to celebrate will be the 60th.

The idea to have everyone send a greeting or letter to Cam for her and Jeannette to assemble into commemorative albums was a good one. The girls sent out 225 announcements and had 170 responses, which filled two large albums. It is going to take Lucy and me weeks to read and enjoy them all.

Hence this round-robin letter of thank you to you all. I would have terminal writer's cramps if I tried to write a personal letter to each of you, so please accept this as

a heartfelt thank you for all of the kind things that were said and done.

Celebrating this half century mark was not without its tragedies, traumas, problems and confusions as well as its joys. Bob worked furiously to complete details in his house construction so that he and Cam could present their lovely new home. Cam and Jeannette argued incessantly about details in their plans for the event. David tried to referee them and Lucy and I put in our comments and advice. It really was a family affair.

There were many problems and setbacks. Among the invited friends one couple had a death in the family. Another couple had an emergency trip to a hospital. Our relatives from Illinois, Ralph and Margaret Crawford got caught up in the Continental Airline confusion and ended up buying two tickets to get here. The girls had planned the event as a lawn party and during the night three and a half inches of rain turned the grounds around Cam's place into a sea of mud. Lucy and I made hotel reservations for guests from long distances, but some of them went to other hotels or got the wrong rooms. And after the party one couple had a car accident on the way to the hotel.

In spite of all of these, the party was a huge success. The sun broke out of the clouds before the guests began arriving at 3 P.M., so that the party could use some of the lawns as well as the patio and the house. It really was fun to meet so many old friends who arrived from as far away as Florida (Lucy's niece Phyllis) and who came from all over California (from San Francisco to San Diego). The Reuther tribe poured in until there were ten of them present. Rare to get that many of this far-flung clan together. And many local friends as well. We spent the afternoon in greetings and reminiscing among 70 friends while amateur photographers recorded the event, Cam, Jeannette, Somtrakul, Chris and caterers prepared the food and decorations.

In the evening those who had come from afar gathered with us and there were forty to enjoy good Chinese food at the China Palace restaurant in Simi. The entertainment was testimonials. David managed to get people to tell about some of their experiences with the McClures before a microphone and video recorder. This put people on the spot and they had to say nice things about us. Lucy and I were married in Decatur, Illinois, on 1 October 1933, so our friends in attendance spanned more than fifty years.

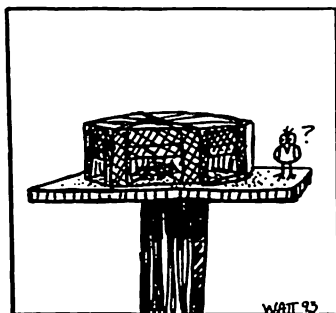
Sunday morning was open house at our place so the Reuthers and others dropped in for coffee and donuts and to see some of the museum. Most folks had been with us before, but it was the first experience for Art and Kathy Risser to be exposed to the McClure house of artifacts and they enjoyed it too.

Ralph and Margaret and Phyllis, his sister, stayed with us all week and we enjoyed showing them a bit of Southern California (Solvang, mountains around us, Will Roger's home and polo grounds) and Wednesday evening (Oct.5) Jeannette and David had a dinner for us at their place in Los Angeles and a little party for Ralph and Margaret's 42nd or 43rd anniversary (they couldn't remember which) on that date.

Things should settle back to normal chaos soon and we will still be enjoying the memories of this occasion. Thank you all for making it so.

Love, Lucy and Elliott

37. Family Letters



I forget when I began writing "Family Letters". It may have been while we lived in Bakersfield or possibly after we were stationed overseas, but for many years I regaled family and friends with a letter each month recounting our activities. An annual letter went to a much wider audience, and these letters, both monthly and annual, have been a source of information drawn for the many stories told here. I continued these letters after we returned to California in 1975.

The event of August 1984 was a trip to Illinois. One of those excursions when everything clicked and you come away with a lot of happy memories.

We left on Thursday, Aug. 2, taking a bus to LAX and catching an early plane to Chicago. There we picked up an Avis car, a new Century Buick, fun to drive, and headed south. Avoiding the highways, we took country roads through miles of beautiful corn and soybean fields and arrived at the farm after dark. Friday began a series of activities that did not let up until we reached home 16 days later. That evening was devoted to a rehearsal and rehearsal dinner. The rehearsal dinner was at the Beef House just east of Danville, over the Indiana state line. The groom was Mark Crawford, son of Margaret and Ralph Crawford, Lucy's nephew and niece who are doing the farming on the family land. Since Lucy is of the Fairchild tribe, pioneers in Vermilion county, it seems like half of the older generation in the county are relatives of some relationship or other. It is Mark who is really operating the farms. His young bride from one of the nearby towns was Vicki Mullins. Anyway, after the rehearsal there were nearly sixty people gathered for the prime rib supper. It is customary for the bride and groom to give gifts at this time, to the bridesmaids and groomsmen. Since they were all farmers, Mark caught them up by giving them all large toy tractors. These went over big.

Saturday evening was the big wedding at the Methodist church in Danville, with about four hundred guests. Bride and groom in white, bridesmaids in orchid gowns, and groomsmen in formal black. A candlelight ceremony with two ministers in attendance. Then the horseplay began. Friends had decorated a pickup truck, and put seats in the back of it. They drove the couple around town in a hornblowing procession. The guests crowded into the Elks club banquet room for the cake cutting, eats, dancing, etc. Mark and Vicki eventually got away to Champaign for the night, next day to Miami and a weeks cruise in the Caribbean. Stops at Mexico, Jamaica, and Grand Caiman. Later, asked how he enjoyed the cruise, Mark's comment was that after the first two or three days he ran out of things to do!

Back at the farm we had post wedding malaise, relaxed and enjoyed the Olympics, and I spent hours walking over the farm and woods watching the

birds, wildlife and flowers. Tallied fifty species of birds on the farm and enjoyed the deer, raccoons, etc. We spent the week visiting friends and relatives. One day Lucy and I went to Urbana to visit with Glenn and Beverly Sanderson and I gave a short seminar to some of the staff at the Natural History section, where he is the head of the wildlife division. One day Ralph, Margaret, Lucy, and I went to Turkey Run State Park in Indiana and rekindled memories of our honeymoon trip there in 1933. Another day was in the Amish country around Arthur, visiting gardens there. We even went to church with relatives. And then Mark and Vicki returned with tales about their wedding trip and spent a whole evening unwrapping the great pile of wedding gifts that had accumulated.

We drove to Peoria to meet two very dear friends from half century ago. While in college I had dated Dorothy Folden for a couple of years and Lucy had known her in church work as well. She had married a Bill Drake and I Lucy. We got to meet her family, although Bill had died a couple years ago. Then, when Lucy and I were working with doves in Lewis, Iowa, we had enjoyed the Burkhalter family. Letha and her son John both live in Peoria so we had a day with them as well. We had worked in Peoria when I was between degrees and was with a tree repair company. So we enjoyed seeing how much Peoria had changed. Like many cities it had just about been rebuilt. (Both Dorothy and Letha have passed away since this trip.)

Yes, we did it, we finally went on our honeymoon, a slight delay of 52 years, but memorable from the very first moment. Cam and Jeannette and their husbands sponsored it for our 1/2 century anniversary, but we were just too durned busy to take it last year. Cam made reservations for us at Yellowstone Old Faithful Inn last year, but we had to cancel so she made them again for July 1985; eight days of a cabin within roaring distance of Old Faithful and with elk in our yard each morning.

We left home on July 7 and 21 days later had travelled 4000 miles and visited 14 national parks and monuments; through the marvelous red rocks country so superb that the eyes and heart are enthralled: Zion, Salt Lake City (where I lectured at the University), Yellowstone, Grand Tetons, Jackson Hole, Flaming Gorge, Dinosaur, Colorado Nat'l Mon., Colorado River, Arches, Natural Bridges, Monument Valley, Grand Canyon, Lake Havasu, and the London Bridge (in that order). The weather was fine, rain almost every evening to keep the country a glowing red and green and sparkling clear atmosphere. I took two cameras (one broke down). There was something even more beautiful around almost every bend in the road, resulting in more than 900 photos! Do it!! if you haven't seen this part of the West, do it!! This was my third time through these parts by car, but I was even more thrilled than when I did it at 12 (to Yellowstone and the Northwest), and 21 (to Natural Bridges), and Lucy and I did it in 1977 (Zion, Bryce, and Salt Lake). So, do it!!

Yellowstone was unforgettable with its geyser plumes each cool foggy morning; bison, elk, or moose in roadside pastures, and orderly enthusiastic crowds of park and wildlife worshippers. Dinosaur with its fossils and

stupendous canyons is awe inspiring. But it was the grace and crimson beauty of the Arches and the massiveness of Monument Valley that left us proud of America. The greatness of the Grand Canyon was almost an anticlimax to Zion and the others. We closed the pilgrimage with Lake Havasu and Lucy's beloved London Bridge.

But this was only the spectacular climax of the year. In April we went to Tucson where I participated in the spring meeting of the Defenders of Wildlife Board and in November the fall meeting was held in New York City. I am not an admirer of the filth, overcrowding, and expense of New York, but my sister Mary made my trip fun with an afternoon of window-shopping on Fifth Avenue and a beautiful day tramping through the Bronx Zoo. Lucy visited with Jeannette and David while I was on this junket. During our drive across Arizona we took in Phoenix and had an evening with Judy and Prasert Lohavanijaya of ASRCT years. Prasert had given up trying to make a fortune as a college professor and he and Judy have opened a Thai restaurant with beautiful decor and excellent cuisine. I couldn't help but be amused by this brilliant invertebrate zoologist bowing to customers. But then here in Camarillo we have a PhD bio-chemist who manages the finest Chinese restaurant in town.

During the spring enough things began going wrong with our Hornet at 130,000 miles, which would require extensive repair so we replaced it with a blue Chevette. Too small for our usual activities, but economical, and it performed well in Arizona and to Yellowstone. Already 12,000 on it in eight months.

I gave a bird watching class for Ventura College in the spring and fall. Both sessions were well attended, 15 in Spring and 22 in Fall. These classes are always fun, but it becomes increasingly difficult to show the students good birding areas as the cities sprawl, more environments are destroyed, and the fires rage. This year 100,000 acres went up in flames while we were away in July, much of the environment around Ojai to the north of us. And in October another 100,000 acres, all around us. We could see the smoke and/or flames of eight fires from our front yard. Some started by natural causes others incendiary action. Quite spectacular, some loss of homes, great losses of wildlife. In the midst of the smoke and low humidity birds came to dripping faucets at Camarillo Grove Park and I netted 75 in one morning. All of these disasters were after affects of El Niño in 1983.

The year was full of family gatherings; birthdays, holidays, special events, about two a month. Two events were really special; Flo, Bob's mother, graduated from California State University Fullerton with her B.A. degree. A real success! In November his sister Sue married Jerry North in a nice ceremony at Flo and Bob Sr.'s home in Yorba Linda. Although we could participate in thought only from a distance, Mark and Vickie Crawford produced a daughter in the fall. This makes Lucy and me Great Grand Aunt and Uncle. The remarkable feature of this is that this young lady represents the seventh generation to live on this farmland in Illinois. Few families can boast such a long tenure on the same land and maintain and increase its productivity (over 150 years).

And sandwiched in with all this have been a trip to the zoos and friends

of San Diego, and to Santa Barbara and Solvang, and occasionally lectures at local schools and clubs. And the usual two days a week of bird banding. This has been a good birding year. I have caught 5,300 birds and banded nearly 3,000 new ones, the others have been repeats. These include 60 species. At Tucson I spent one morning out with the local banders. They had an excellent place to work and caught 63 birds of 18 species in about three hours, including such lovelies as the Elf Owl, Cardinal, and Green-tailed Towhee. I even captured some goodies here in the Camarillo area, just this week a splendid Cooper's Hawk and during migration a crimson and yellow Western Tanager, a Sage Sparrow, and a drab Black-chinned Sparrow which stumped me for a while. This was a life bird for me and the first one that I had ever handled. Remarkable that each year I add a species or two to my banding total, now 517 species.

So, as you say, enough about you-all, what about the rest of the family? Jeannette and David bought and moved into another home in Los Angeles not far from where they were living. They are still renovating, painting, repairing, and furnishing it and are having a great time. Bob and Cam continue to add to and improve their home as well. Both families took long trips during the year. Forrest is now a young man, taller than Cam, and assailing Bob's height. He is in high school. Heather Folk is doing well in second grade and she and David's Heather, also same age, have had great times together during clan gatherings.

I have been intending to summarize my fifty-four years of bird banding and here looks like a place to insert it. I began with Mourning Doves at Lewis, Iowa in 1938. Three years in Iowa produced only 12 species and 1,692 birds, mainly nestling doves. Five years in Nebraska yielded 44 species and 2,448 birds. We worked intensively with birds and banding in California for the next five years and totalled 80 species and 11,236 birds. In Japan the forestry department would not give us permission to band extensively, saying that there would be few returns and we would just be wasting time and money. Our thrust was with egrets and herons and we banded many of their nestlings, but true to the authoritative viewpoint, we received no recoveries. Later with MAPS rings we learned much concerning the movements of Japanese birds. Inadequate aluminum rings was the reason. In eight years we tagged only 18 species and 5,316 individuals. Malaya was very exciting and there I used British rings of good quality. Hussain and I marked 250 species and 6,301 birds during the years 1959 through 1963. In the return trip to Japan I was too busy organizing MAPS and ringed only 9 species and 143 individuals. In all of the travelling and contacting other banders I avoided banding their catches just to be able to say that I had ringed such and so, and limited my banding to actual studies. The eleven years from 1964 through 1975 yielded 168 species and 13,679 individuals. Now back to California we have sixteen years and 113 species, with a total of 35,328 individuals; a grand total of 523 species and 76,143 birds plus or minus a few! Not bad for a peregrinating ecologist!

1989: Our whole focus this past couple of months has been or was on our proposed trip to Illinois. It imposed an infinite amount of detail and planning, but other curricula in our busy lives demanded attention as well. There was the celebration of our 56th wedding anniversary with the family at a famous beach restaurant in Santa Barbara, and meeting with individual Boy Scouts working on merit badges, and visits by Jean and David Brown, and the fall Audubon Picnic, and more events than I can recall!

Lucy remains in such good health, she never goes near a doctor. But I decided that I should have a few checkups before I tackled the wilds of Illinois. The medic with the usual x-rays and thumps and grunts couldn't find anything wrong with me that he didn't already know!! The dermatologist treated my sun spots from too much exposure in the tropics. Then a crown broke and tooth began to ache. The dentist was a financial disaster; replaced crown, root-canal work, a tooth implant, etc., to the tune of a thousand dollars!! I'm still in shock!! These appointments ran right up to our leaving date. The week before we left I contracted conjunctivitis requiring more expensive medication, but my eyes cleared up the day we boarded the train.

A suit! Lucy demanded that I get a new suit., but I couldn't see the necessity since I had bought a couple of new suits in 1974!! Finally found a nice suit here in Camarillo to fit my rotund figure, but I wore it only twice; going to church in Illinois!! In the meantime I was working on manuscripts and preparing for the next bird study class which I was to begin teaching the day after we returned. And there was the matter of tickets. First there was a Whittell Trust meeting at Tucson to be held on 22 October, later changed to 5 November, which required changing the air tickets. While this was going on Lucy had me taking her from place to place to get the new clothes that she wanted. We delayed on the train tickets; nobody rode the trains anyway, Lucy said. Only she forgot about the DC-10's!! The trains to Chicago were fully booked. In fact, trains going most anywhere were fully booked; but we kept trying. Finally the booking agent said that there was one last one available and did we want it. There were qualifications!! We could have a sleeper to Kansas City, but must change trains there and take a coach to St. Louis. We wanted to pick up a car at St. Louis, but we could check our baggage only to Kansas City and carry it on to St. Louis since there was no baggage car on that train. Yes, we could check baggage to Joliet, but would have to change from sleeper to coach on the same train from Kansas City. Since time was short and options few, we accepted that. As we paid up and walked out the agent said, "By the way, which one of you is handicapped?" They had sold us a sleeper accommodation for a wheelchair handicapped!! So we were not even sure that they would let us have the room when they saw us lugging on bags and things.

During August and September Jeannette and David began moving from LA to a house in San Luis Obispo. David had accepted a job there and they had rented an apartment. She is still commuting to LA once a week to work with her patients there. Anyway, she came by and took us to the train station in LA (our train left at 8:30 p.m.). The attendant for our car was Roland and



Figure 94. *Upper:* The Tindaan family of Northern Luzon: Tony, Viola, and my god-son Elliott. *Lower:* Philippine bird bander Oane and the negritos that we met in northern Palawan (1964).



Figure 95. Group photograph of the people participating in the Bharatpur Bird Sanctuary in Rajahstani, India (December 1969). (1) Dr. S. Somadikarta, Indonesia (2) Dr. Won Pyong-Oh, Korea (3) Mrs. Lucy McClure, MAPS (4) Dr. Salim Ali, India (5) Dr. McClure, MAPS (8) Mrs. Puntipa Kwanyuen, Thailand (9) Mrs. Mrs. Lena Rabor, Philippines (12) Dr. Joe Rabor, Philippines (13) Huang, Taiwan (16) Unidentified visitor (17) Mr. Sexena, India (18) Hussain, East Pakistan (21) Mr. Godofredo Alcasid, Philippines Severinghaus, USA (25) Unidentified visitor (26) Unidentified Chaiyaphan, Thailand (29) Unidentified visitor (30) Miss C. Iwata, (33) Mrs. Jackson, Britain (34) Col. C.F. Hamilton, India (35) Dr. Mr. Paney Singh, India (39) Mr. T. Kabaya, Japan (40) Mr. J.C.

MAPS and ICBP conference at guesthouse and headquarters of the (1) Dr. S. Somadikarta, Indonesia (2) Dr. Won Pyong-Oh, Korea Dillon Ripley, USA (6) Dr. Y. Yamashina, Japan (7) Dr. H.E. Somtrakul Primrose, Thailand (10) Lord Medway, Malaysia (11) Mr. M. Yoshii, Japan (14) Unidentified visitor (15) Mr. Chen Ping-Mrs. Lucia Severinghaus, Taiwan (19) State Forester (20) Dr. K.Z. (22) Miss E. Foster, Britain (23) Dr. T. Koga, Japan (24) Dr. L. visitor (27) Mr. S. Severinghaus, Taiwan (28) Mr. Somtob Japan (31) Mr. P. Jackson, Britain (32) Mr. Sherjang Singh, India Naik, India (36) Unidentified visitor (37) Dr. B. Biswas, India (38) Daniel, India.



**Figure 96. *Upper:* Lucy meets a Frog Mouth in Australia (1974).
Lower: Laughing daughter, Somtrakul in Thailand (1968).**



Figure 97. Upper left: The rare Rufus-headed Robin, *Luscinia ruficeps* of central China found on Mt. Brinchang, Malaya (1963). **Upper right:** Kittu's new swallow, the White-eyed River Martin *Pseudochelidon sirintarae*, of central Thailand (February 1968). **Lower:** Kittu, Hasuo, Somardikarta and others at Khao Yai in Thailand.



Figure 98. *Upper:* Pilai Poonswad visits at Camarillo (our kitchen) (February 1987). *Lower:* Pilai also visits Cam's "ranch" in Simi (February 1987).

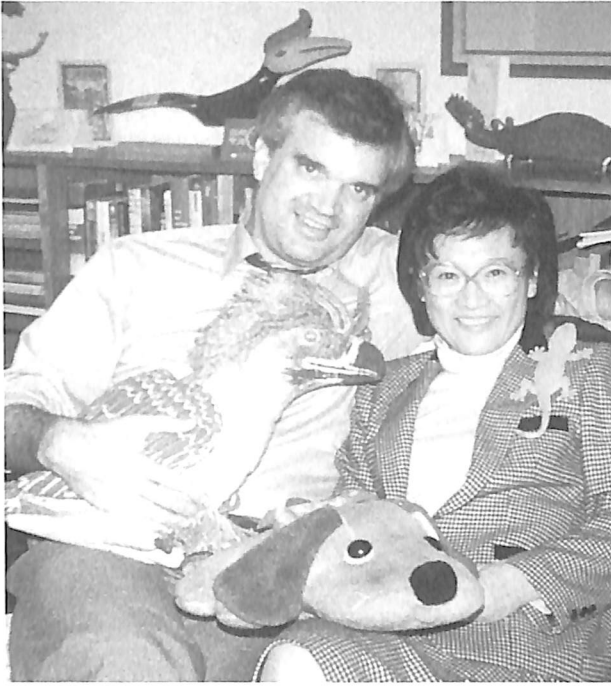


Figure 99. *Upper:* Sheldon and Lucia Severinghaus (both Ph.D.s now) in Taipei, Taiwan (Fall 1985). *Lower:* Lucy and Miyuki Hawkins at Camarillo (Fall 1984).



Figure 100. *Upper:* Jean and David Brown in McClure's kitchen (August 1990). *Lower:* Nobuko Bowden visits us at Camarillo (May 1981).



Figure 101. *Upper:* Ralph, Mark, and Vicki Crawford and Lucy at Danville, Illinois (1989). *Lower:* Lucy and BK lunch at home (1990).

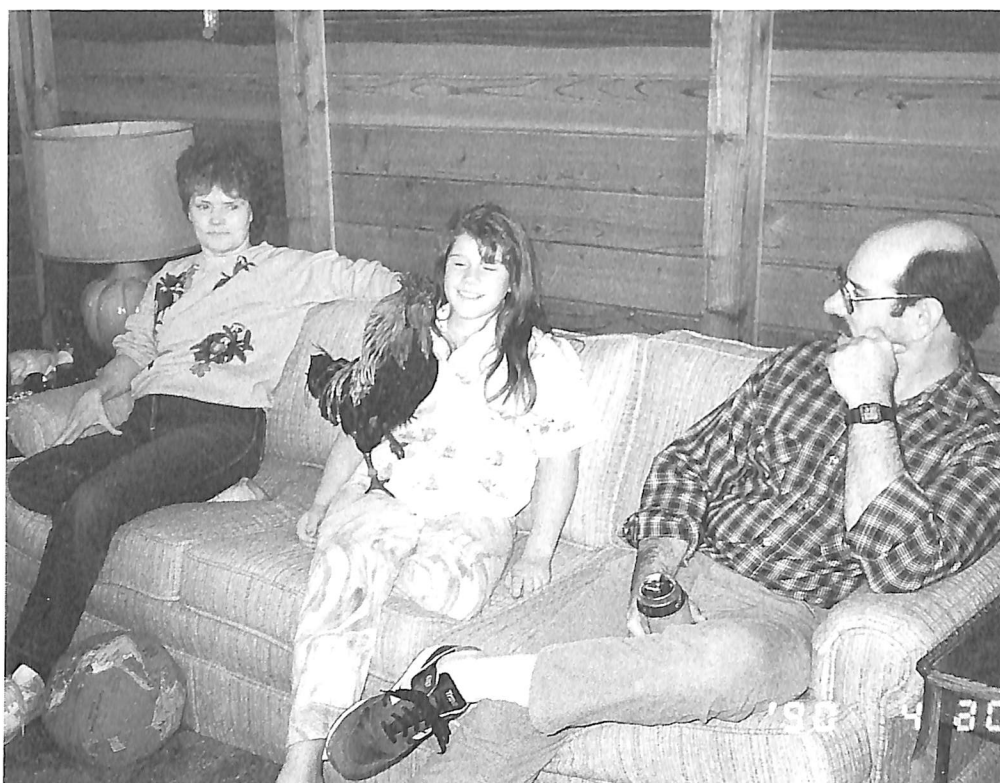


Figure 102. Upper: Tom Marks, Elliott, Bob Marks, Lucy at Lobster Trap restaurant, Oxnard (February 1986). **Lower:** Christine Jaeckel, Heather, and her pet rooster "Squeaky," and Bob Folk at home in Simi, California (April 1990).



Figure 103. The Fiftieth Anniversary. *Upper:* The Reuther Clan—Ronald, Dan Newcomb, Walt, Lucy, Roland, German visitor, Phyllis Motel, Linda Newcomb, Fred at Cam's (1983). *Lower:* Lucy's tribe—Ralph and Margaret Crawford, Elliott, Lucy, Phyllis (Crawford) Hensel, David Powles. Forty-second Anniversary for Ralph and Margaret (1983).



Figure 104. Fiftieth Anniversary participants (1 October 1983). *Upper:* Bob, Cam, Elliott, Lucy, Jeannette, David. *Lower left:* McClure hams up the cake cutting. *Lower right:* Cam and Jeannette and their second grade teacher Marcella Gilbertson.



Figure 105. *Upper:* Elliott, Jan, and Hal Wasserman in Camarillo (October 1991). *Lower:* Jeannette's 50th birthday party in Los Angeles. Johnathan Pierce, Somtrakul Pierce, Hal and Jan Wasserman, Cam (12 January 1991).



Figure 105. Forrest tries the military (November 1988).



Figure 106. The jungle basher and Lucy reach 80, Camarillo (1990).
Two lower pictures courtesy of Camarillo *Daily News*.



Figure 107. The family gathers in the garden of 69 East Loop to celebrate Lucy's 81st birthday (August 4, 1991).



Figure 108. Decorations at our home for Lucy's Memorial (13 October 1991).

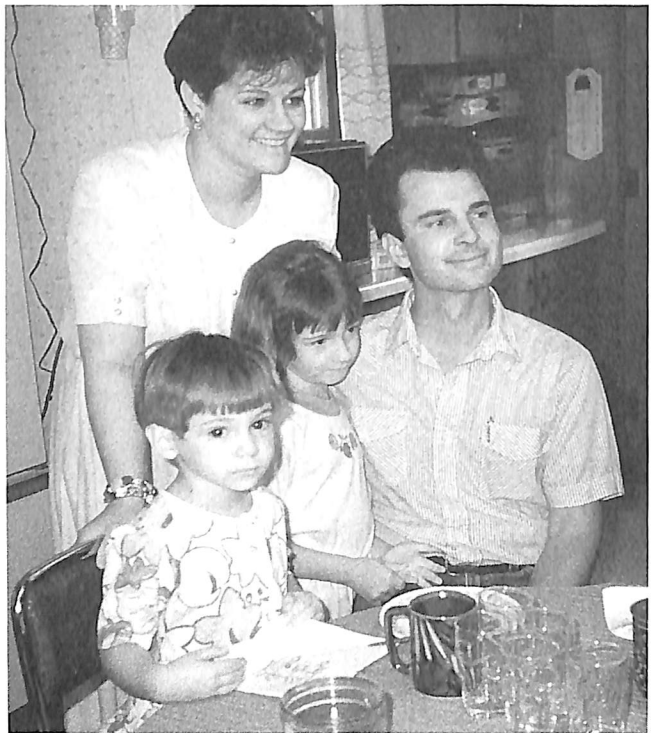
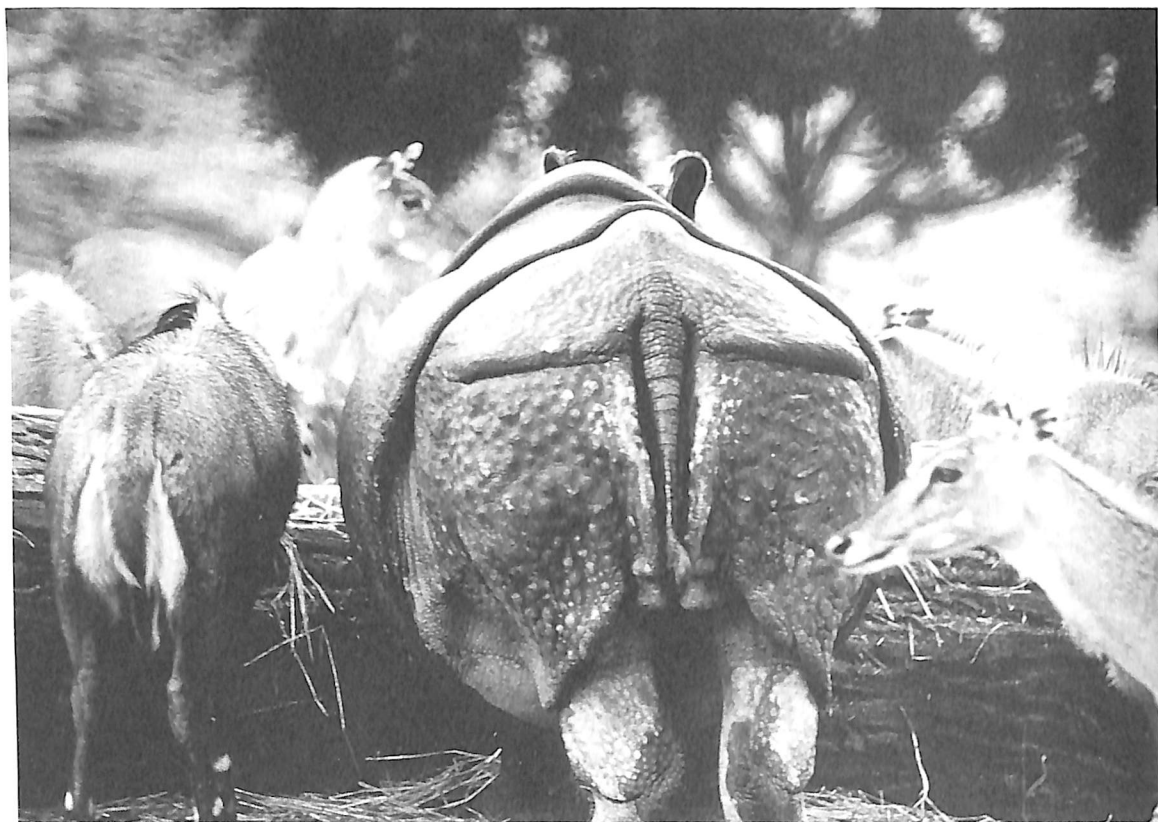


Figure 109. *Upper:* The “Old Brick” Fairchild home place (October 1987). Built in 1814 it was destroyed by vandals in June 1989. ***Lower:*** The next generation: Vicki, Mark, Margo, and Megan Crawford (1990).



Figure 110. *Upper:* Dr. Alan Kemp and McClure in discussion at Bangkok (April 1992). *Lower:* Atsuo Tsuji, Pilai's assistant, photographer and mentor, Khao Yai (April 1992).



Tailispiece: Politicians gather at the taxpayers' trough.

he got us aboard and settled in the room which was at the tail end of the car, and was very good accommodation for us decrepit old folks!! By the time we got to Albuquerque I had met the conductor and found that the room was not booked from Kansas City to Chicago and he suggested that I see the train agent at Albuquerque and change my ticket. It was only a fifteen minute stop, but the agent hurried his computer and got us permission to use the room on to Joliet. It was a fun trip, the food was good and well served, and the sleeping was good if you have no trouble sleeping on a rollercoaster!! Since such minor details don't bother Lucy or me, we did fine. All along the way the once lovely stations were in disrepair or absent and the train stopped only long enough to disgorge an occasional passenger. The station at Joliet had once been beautiful, marble stairs and floors now cracked and in disrepair, broken walls, broken elevators, no escalators, etc., and no porters to help you carry luggage up or down the broken stairs. But we were told money had been allocated for its renovation and repair had begun.

Avis and Hertz were not present so we rented a Budget car. They gave us a two year old Mercury. We drove the country roads; corn and beans were being harvested; the patches of woodland and forest were ablaze with color. Rain that had been with us on the trip gave way to lovely clear weather and fall colors were the loveliest that we had ever seen, even though we had lived there for many years. About half way to Danville we came to an intersection and no brakes; the master cylinder in the brake system had broken. Mechanics in the local towns said "So sorry!!" so we drove it carefully on to the farm near Danville. I called the Budget outlet in Joliet and they said that they would deliver another car, but we were 150 miles away. The driver was to meet me in Danville at ten and I assumed that he meant ten in the morning. We were all asleep when an irate caller said that he was waiting and it was 10:00 p.m. The Ford Tempo trade was a good one and we had no more car trouble.

For the next ten days we visited with relatives, rested, watched the corn and bean harvest, took care of legal matters relating to the farm, and were wined and dined by people until we about ate ourselves into a decline.

The return trip had its moments also!! The rain returned as we drove north and it was cold when we arrived at Joliet. We turned in the car and then waited in the decrepit, unheated station for the late-afternoon train. It arrived on time, but broke down as it entered the station area. We had the same room and the same car attendant, Roland, but a different car. It was an hour before the repairs had been made and we were on our way, but then while we were in the dining car having supper the train again broke down, out in the country. A few repairs and we went on. Our stateroom floor was wet which we thought was from the rain, but learned that it was a leaky air conditioner, for which the controls were inoperable and we enjoyed the passing scenery wrapped in blankets. The flood was augmented when our private toilet plugged and overflowed, but Roland was able to repair that. And the lower bunk wouldn't stay down, but Roland solved that with a well placed roll of toilet paper. The food was good and we met a lot of interesting people, arriving home unscathed!!

As usual when at the farm we stayed with Margaret and Ralph Crawford.

Mark and Vicki have two active daughters, two and four years, who were a joy to be with. Mark and Vicki, so busy with harvesting that Margaret was baby sitter and we got to enjoy the kids!

Jeannette met us and took us to her place, which hasn't been sold yet, and Cam came to haul us back to Camarillo. Jeannette had patients and Cam had classes to attend to so we got delivered hurriedly. Immediately we were caught up in the stream of things. Our refrigerator had broken down the day before we left, so we had emptied it and left it open. Today they are delivering a new one, we hope. Sorted mail, prepared two lectures for my classes Friday and Saturday, got the cockatiel, BK, from the pet shop, etc., etc. If you are bored with all of this, we weren't. It was a fun trip and we vow to take the next one by train as well, although I have a flight to Tucson next week!!

1990: I have been trying to think of things to tell in this annual report. There is not much thrilling about a tale of in and out of hospitals and doctors' offices, but that seems to be the scenario for 80 year olds. So I'll cover that first and then turn to more interesting things. Lucy had a slight stroke before Christmas and spent a month in extended care. She was doing well with her recovery; no sequelae, good speech, good memory, able to walk, etc. Being somewhat over confident, she tripped and fell breaking her left wrist. This healed promptly but a month or so later she fell again and didn't break but was shook up. She has recuperated from this also.

I was having trouble with lumbar arthritis but surgery didn't seem wise and exercise has alleviated it. Mid-summer found me being irradiated for a prostate cancer and a couple of days in the hospital for implant radiation. We are assuming that the effect of all of these rads was positive!! Will know in the next few years!!

Jeannette, David, and Alexander (who just passed two) moved from Los Angeles to San Luis Obispo over a hundred miles north of us. David is working in the area for the State and both he and Jeannette plan to develop a practice there. They have bought a house in Los Osos, a village nearby, and are now in the process of establishing there.

Cam is busy teaching mathematics in Simi. She wanted a teaching certificate so has taken the necessary courses and is practice teaching. She will be back in professional library work as soon as she achieves the certificate. Bob helps hold the fort together as the family scatters in its activities. Heather entered junior high and likes it. She made honors last spring. In mid-summer Forrest entered the military but is still in bootcamp and special training. Hopes to be trained in engineering and especially bridge building.

I have been busy with my bird work and writing. The spring and fall bird identification classes at the local colleges were well attended with twenty enrollees in each and we not only made friends for Audubon and the birds, but each other as well. Have given fewer lectures at schools, but do enjoy the contacts with the kids. Finished a little book on Mourning Doves which has been accepted by a publishers, but I don't know when it will appear. Also a

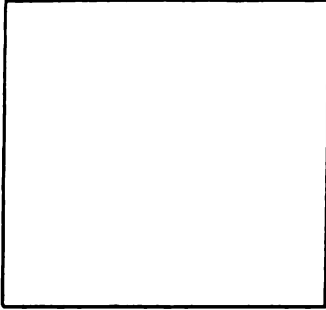
paper on urban birds and one on diseases in House Finches were well received, wrote a couple of articles for the new journal *Birds International* on doves and mockingbirds. Cam and I spent part of a week attending an ornithological conference at UCLA where I met a number of old colleagues.

With the family now dispersed over a much larger piece of geography we do not get together as often, but did gather for the Fourth of July, some birthdays and other important holidays. For our 57th anniversary Cam, Jeannette, Somtrakul and their families gave us a new floor covering for the kitchen which is nice and shiny now.

Jeannette still maintains some teaching and other interests in Los Angeles so she goes there once a week stopping in to visit with us en route. Cam and Heather usually come by on Saturday afternoon, so we still keep in close touch with both girls. Mary came from New York to be with us for two weeks in July. She was here while I was in the hospital and helped with Lucy and the house. So I guess it has been a busy year after all.

38. An End and a Beginning

13 October, 1991



IT was nearly a year since a day of illness brought on by a mild stroke had incapacitated Lucy. She also proved afflicted with high blood pressure and elevated cholesterol. Medication to alleviate these brought on severe complications, and she was again hospitalized. This proved even more counter productive. My stolid and unshakable Lucy developed hallucinations and became so unmanageable that they had to restrain her. She was convinced that all of the attendants in the hospital were from outer space and that they were trying to do her in. Seeing her terror I could not permit her another night there. Dr. Sasaki, knowing both her and me for many years, signed her out to me and let me take her home. She was quiet for a few days under different medication, but the hallucinations returned to frighten her. David and Jeannette were convinced that she needed psychiatric care and placed her in a hospital in Westlake. The room was plain, quiet and as unpretentious as that of a military hospital. This seemed to calm her, along with minimal medication and in a few days she could again return home where Kathy, our practical nurse, gave her the good and stringent care that she needed. Although she argued with Kathy, hating pills and exercise, Kathy used subterfuge to get her to take her medicine so that Lucy came to love her. Our other helper, Bernice Powell, came in once a week to do accumulated housework.

Early in the year the world was becoming hazier and hazier for me and street signs almost illegible. My oculist, Dr. Spencer, recommended cataract removal. My left eye would be first. Spencer was a young doctor, conservation minded and my visits were usually bullsessions concerning the environmental problems of the world. As an oculist he was an expert, performing as many as eight cataract replacements on a given Monday. A closed circuit TV permitted relatives or friends to watch the surgery. Preparation was simple: the painless operation performed in his clinic in Camarillo, and in what seemed but a few minutes, wearing a patch, I joined

Cam who had been watching. The next morning the patch was removed: the world burst forth in all of its pristine beauty, green was green again, the sky was bright blue, and street signs were legible. A few weeks later the clouded lens was replaced in the right eye and, lo and behold, I had 20/20 vision again (with glasses, of course).

The tiny plastic lens replacements were a mystery: why didn't my eyes reject this foreign matter? The story was one of the many miracles that have sprung from military and space efforts. Windshields of some of the combat aircraft were of a new force resistant plastic, but when anti-aircraft missiles burst before the plane, the pilots or crew were brought before the doctors, their faces damaged by the shattered windshields, tiny fragments of which had penetrated their eyes as well. Unable to remove these splinters, doctors were amazed to see the tissues of the eyes accept them without rejection. Researchers grasped this and developed the lenses that now give us clear vision.

Lucy was improving. She had only a slight speech problem from the stroke and Kathy was giving her good care and manhandling her into taking aspirin and some exercise. Never of athletic nature, she continued to resist taking adequate exercise. Dr. Sasaki had warned her, "Take care, the next clot could kill you!"

It was the sixth of October. Kathy had bathed her, fixed her hair, and prettied her for the day. We lunched at a local Mexican restaurant that we both liked and then spent two hours exploring and shopping at the Price Club (a wholesale outlet) near Oxnard. Lucy loved to shop and never tired of it. We couldn't get her out to walk, but she would push a cart through all of the aisles of a supermarket. So on this occasion she did not seem to tire. After a busy and joyful day and a light supper, she spent the evening reading.

She had just gotten up, been to the bathroom, and was at her bedside when I called to her that breakfast was ready. As she reached for her robe, a vessel in the right lobe of her brain burst, flooding that side with blood and she collapsed across the bed. Receiving no response to my call, I went in to get her and found her lying there. A quick glance at her eyes told me that it was a severe stroke. I called Phyllis Frew, a neighbor, to help me with her and 911. The paramedics did what they could for her and quickly

got her to the Pleasant Valley Hospital only a few blocks away. A brain scan revealed the extent of the damage and Dr. Sasaki, who was on duty at the time, said that they could keep her alive. Knowing that she would resent residuals should she have a partial recovery, a topic we had often discussed, I would not permit it. Without regaining consciousness, she died on Thursday evening, October 10.

Jeannette, Cam, Somtrakul, and Jan Wasserman were with us each day. Jeannette had just returned to Los Osos that afternoon. Somtrakul, Cam, Forrest, and I were visiting in the evening and aware that Lucy was failing. We went for a quick supper at a nearby restaurant and returned to find her gone. I kissed her, saying that we had had a long and eventful life together. There were tears all around.

Aware that this was an eventuality, Cam and I had visited a local mortuary and made arrangements. Busy preparations for a cremation and memorial services and constant phone ringing from well wishing friends filled our time. Jeannette came back and we viewed her mother only once.

The memorial service was at the Pierce Mortuary in Camarillo on the afternoon of October 15, with music and song. In typical McClure tradition we made it a thoughtful and happy occasion, friends and relatives recounting interesting and happy moments they had shared with Lucy, and I told of the incident of the birthday cake and the ants.

Following the service guests came to our house for an exchange of thoughts and friendship. A caterer had set up nice refreshments presided over by Kathy and Bernice.

On one of my trips to India, I had obtained a beautiful ornate urn. This served as the urn for Lucy's remains. California Laws permit the disposal of a deceased's ashes according to the wishes of the family. We, of course, had notified Lucy's friends and relatives in Illinois: Mark Crawford, Vicki, and Margo, their youngest daughter, had come to attend the services and to represent the Fairchild family back home. Knowing how much Lucy loved the farm and the memories of her childhood there, the girls and I asked Mark and Vicki if they would distribute the ashes at the family cemetery (a corner of our property). They were complimented and pleased. As Thanksgiving approached Mark felt it an appropriate time for this ceremony. Ralph (Lucy's nephew) and Margaret, Mark and his family

with a few other relatives gathered on the cool and windy afternoon; said benediction and scattered ashes about the large family headstone while the surrounding forest watched quietly. Later her name was added to those of her father and mother.

So a long episode of my life closed to open a new and continuing fruitful one.

39. Thailand Again



ABOUT the *Ides of March* of 1992, I received a letter from Pilai announcing that she was sponsoring an international workshop concerning Asian Hornbills and would I join her? I wrestled with the idea for a while and decided to go! This entailed a hurry-up trip to Los Angeles to renew my passport, which took a week. Bill Supri (of whom you will hear more later) took me to the government offices in Los Angeles, and then picked up

my passport when it was ready. I sought the advice of the doctor who was treating me for vertigo as a result of deterioration of the left cochlea, to see if I could go. He said, "Go ahead and have a good time!" My eyes checked out OK as well, so I canceled a few appointments, packed up and left on April 1. I should have known that April Fool's Day was not a propitious time for departure. The Northwest flight was booked to leave Los Angeles airport (LAX) at 1230. Jan Wasserman took me to the airport and dropped me into the helter-skelter of preflight sign-in and went her way to other chores.

Hurry up and wait, as a full load of passengers assembled. "Have your boarding passes in hand" and load by the numbers! But wait, the cabin lights did not function properly so we could not board. Again, "have your boarding passes at hand" and we filed to our seats, grappling over the overhead storage. Given the green light, the plane was ready to start, except that one motor failed to ignite. Remaining at the dock, it took an hour or so to replace the faulty starter. Overhead a late spring storm was brewing as thunderous clouds moved into the L.A. basin, and a pyrotechnic display of lightning presaging heavy rain closed the airport. By the time that the airport could reopen, our flight air-conditioning to keep us cool had burned so much fuel that we had to delay further for refueling. As an added insult to many of the restless passengers, so many flights had piled up over the basin awaiting the dispersal of the storm that we had to stand in line on the approach runway waiting for them to land. Result: a

four-hour delay in departing.

Flying the circle route, we bucked headwinds and, instead of reaching Seoul, South Korea at 1630, we landed at 2230. Because of confrontation between North and South Korea, there is a state of almost continuous alert and a curfew closed the international airport, which is a military airport as well, at 2300. A long drive through the darkened city brought us to the luxurious Lotte Hotel. Here a heated and loud argument among the employees accompanied the registration. The onward flight was not scheduled until 1230 the next day.

This gave me time to explore in the vicinity of the hotel. Seoul was unbelievable! The first time that I visited there, during the MAPS period, the drive from the airport to the city was through the rice fields. At that time the city was chaotic! During rain storms, rocks rolled from the denuded and shack-clad hills into the streets; the buildings of Kyung Hee University were massive, unfinished, and unheated. A shattered street lined by small shops opened onto the campus of the EHWA Women's University. Now Seoul, 30 years later, is a city of skyscrapers and modernity. The Hotel Lotte World is an impossible conglomerate, including the 33-story, 538-room hotel, two department stores, and an entire "Disneyland" entertainment under one roof, and an adjoining man-made lake with an island of recreation and carnivals. From my 13th-story window, skyscrapers were evident in all directions.

We unloaded at Bangkok at 1700 on Friday, a day later than the midnight arrival cataloged for the previous event, and I worried about friends who might have waited until that late hour, but only Pilai had failed to inquire about the flight. As I pushed my cart of luggage into the vast waiting room of the Bangkok airport, I was rushed by a happy group of laughing young faces. There was Pilai, Somchit, Lakhana, Pornthip, Sunee, Chalernporn, and several children. Although some had children and all had aged, they looked so fresh and young to me. Remember I was 82, and most of them were less than 50.

Somchit drove me to a "hotel" near the old SEATO lab that Pilai picked out for me and other international visitors because it was cheap. From the moment that I stepped out of the airport terminal, Bangkok was strange to me. I was totally at a loss and did not recognize any

street or area. It was and continues to be a construction mad-house. Overhead highways being built in a multitude of directions; a monorail under construction; massive skyscrapers with huge cranes swaying above them (nearly 100 under construction Pon told me) and traffic that has no equal. Streets had been widened to three lanes that supported five lanes of traffic (two straddling the white lines); a motley of vehicles of all sizes from trishaws to buses, intermingled with swarms of buzzing motorcyclists. Air pollution 100%, noise pollution 100%, traffic madness. Drivers seemed to watch out for everyone else, and to miss a collision by an inch or so was wide enough. Amazingly, in four days of driving I did not see a single accident or flattened pedestrian. Traffic lights were obeyed and intrepid police wearing gas masks flailed the action into labyrinthian patterns.

We reached the "hotel," which was in what appeared to be almost a slum of four-storied apartments; a group of four rooms above a travel agency; rooms that had been "modernized" for guests. (Actually I had slept in much worse "modernized" hotel rooms in the Philippines, equipped with bedbugs, but these rooms were clean.) Trash piled in the streets, adjacent to overhead highway construction, no restaurant available, and a rather odd view of security—the next evening when Somchit and I returned from shopping, we found that the proprietor had given a friend a key to my room so he could bathe (and leave a trail of cigarette butts). At first I refused to stay, but after seeing that the room was clean and adequate, I moved in my luggage. Later Pon picked me up and we had supper, with the group that met me, at an excellent restaurant that the girls knew I would like since Lucy and I had often eaten there.

Saturday morning Somchit and Toni came early for me. Toni is a tall, handsome, young cum-laude graduate from Chulalornkorn University and is now using his talents at IBM. He was as dare-devil a driver as his mother, so after having breakfast of donuts and coffee at a nearby Donut Shoppe, we sped through traffic to Old Town and Dr. Boonsong's clinic. Even though some of the shops had changed, Old Town around the clinic was recognizable. Boonsong had died in February after a long illness, and I wanted to extend my sympathies to Mrs. Lekagul and the family. We met some of them and then went shopping in the area. Nearby was a stamp shop; the proprietor had been saving Thai first-day covers and mailing them

to me periodically. I picked up those that he had accumulated and bought several sets of opium weights for gifts. These are beautiful metal replicas of weights in animal forms, once used to weigh parcels of opium.

I found Sukumvit Road lined by skyscrapers and a mass of struggling traffic; unrecognizable even at Soi 15 where we had lived the nine years across from the Manhattan Hotel. To think that when Chet Southam and I had traveled it 38 years before, it had been only a gravel road, partially paved and lined with small one-story shops. But then there had been a "Toonerville Trolley" street car service in Old Town at that time as well. A quick stop at 4 soi 15, our old home—found the lawn a macadamed parking lot, the house altered as a beer tavern, and no evidence of the small wildlife that used to habituate the garden. Before the old wall, still struggling to stand, at my shoulder a taxi driver now somewhat grayer asked, "How is the Madam?" A former driver who used to take Lucy shopping almost daily, he was saddened to learn that she had passed away.

A short distance farther down Sukumvit at 10 soi 35 were Katey Buri's gardens, now a mere oasis amid a forest of massive buildings. She and Dr. Rachit finally responded to our insistent banging at their gate. Still recovering from five-bypass heart surgery, she showed us how she had enclosed almost the entire garden with cages for hornbills that she had salvaged from the Sunday Market or from the airport shipping confiscation. She still had pools in which she bred river otters, but she had not succeeded in breeding and raising hornbills.

Knowing that I wanted to buy jewelry, Somchit said that she knew an artisan who dealt in beautiful silver. We drove down a narrow street to his home and shop where I was privileged to meet a most impressively happy man—slight, in his forties, nice wife, and three beautiful teenaged daughters. He chatted with all of us and laughed merrily as he assembled an array of lovely pins and rings. We spent a gay two hours eating a variety of fruits and laughing at a variety of stories, while he sent his daughters to a neighboring manufacturer to repair a ring that Jeannette had entrusted to my care (repaired at no cost). From here we drove to the Narayana Phand, the tourist bureau outlet for Thai handicrafts where Lucy and I had shopped almost every week, and which had metamorphosed into a great four-storied structure. I bought an emerald ring for Heather's birthday,

and other trinkets.

By now, I had worn out Somchit and Toni and we returned to the "hotel." Pilai had reserved rooms here as well for the Chinese and Vietnamese delegates to her conference. She arrived later in the evening, driving a van, and took us to a large open-air restaurant by the Chao Phya River for a Thai supper beneath the stars and city lights.

Sunday morning, Lakhana and Pakorn came to take me to the Sunday market. A lovely girl with good legs, she joined my staff early in the MAPS program, and worked with me until Lucy and I retired. Love developed between her and Pakorn, who worked in another office in the building. Lucy and I attended their wedding and reception, and Lakhana continues to work with Dr. Niphan in the biology department. We carried my luggage to the Regional Community Forestry Training Center (RECOFTC), a new building on the Katsetsart University campus, not far from the old ASRCT. This is an excellent training and housing center with beautiful rooms, dining facilities, and lecture halls. Having established me in a room on the third floor, we drove to the weekend market. The old Sunday Market, which furnished Lucy and me pleasure nearly every Saturday, and where Somtrakul and I tallied the sale of birds and wildlife for a year, used to be on the parade grounds in front of the Royal Palace. It has had a checkered history since then. When officialdom disbanded it, merchants and shopkeepers raised such a cry that it was reopened at the north edge of town in a park near the railroad shops and maintenance. That proved too far out for the customers, and it was abandoned. Finally, the city designated an open area for the market, where it now remains. We spent all morning wandering among the alleys of shops where I bought a beautiful Tibetan knife, a kukris, for Forrest to add to his collection. When he was a youngster, he used to look at and covet my knives, saying, "I will get them because I will outlive you!"

We returned to Katsetsart, where I was to meet Dr. Niphan. She had a previous meeting, but came as soon as she could and we had a wonderful few hours together. Remember the story? When she was pregnant with her first son, her husband said, "The baby better not have blue eyes!" (Incidentally, she bore him three sons, all now college graduates in several professions.) At the lab, now called the Thai Institute of Science, Technology, and Research (TISTR), to see her office and the old stamping grounds, and to discuss

the many enterprises and activities that she now heads; all kinds of applied sciences. Unfortunately, the lovely lawns, pond, and gardens of ASRCT have now sprouted modern but unsightly buildings for greatly expanded research and applied science activities. We had supper at another interesting open-air restaurant, and then Dr. Niphan hastened to prepare for a trip to Pattaya for more official discussions. Her work is of such importance that on several occasions she has shown it to and discussed it with the King.

Monday, April 6, was a day of lectures and discussions at RECOFTC. Pilai had invited delegates from Japan, the Philippines, China, Vietnam, Laos, Cambodia, Taiwan, Thailand, India, Malaysia, Singapore, Indonesia, South Africa, and Germany. Dr. Allan Kemp, who is the world authority on African Hornbills, talked about his work and the remarkable adaptations that Ground Hornbills have made to exist in the semi-desert. They live many years, but breed and raise young only when the weather or climate is propitious. Pilai talked about her work in Khao Yai, work that has made her world-renowned in ornithological circles. Most of the delegates spoke as well, discussions continuing into the evening. Tuesday morning we continued these, and at noon had the official opening of the International Workshop on Asian Hornbills. Why so late, after the discussions were already in progress? Typical Thai officialdom! Monday had been a holiday and the invited officials refused to participate on a holiday. Oh well, you ride with the punches! Following this official, media-involved opening, we boarded a bus for Khao Yai where the 30 of us were housed at an impressive tourist area that was new to me.

As Pilai has matured in science, she has grown in stature, and she operates her field activities with the firm grip of a sergeant. In order to accomplish all that she wished, and to be assured that her victims were exposed to all of her programs, she divided us into four groups, each spending half a day on the following rotated efforts: (1) watching a hornbill nest; (2) trapping a hornbill (the third group actually caught and banded one); (3) working a radio tracking station to follow the movements of marked birds; (4) laying out a transect about a nest in order to identify the many environmental elements present. Friday we discussed the results of these observations and returned to Bangkok and RECOFTC.

As I had warned more than 20 years ago, Khao Yai National Park was and is in trouble. Officials in charge recognized that something was wrong, but not being ecologists they failed to understand what. So they closed the park to night usage. No longer could visitors remain overnight at the tourist and park facilities. Attendance, which had been up to a thousand visitors a day, dropped to only a few. The El Niño weather pattern that brought rain to California this year, brought drought to Khao Yai. The severe drought of 1982-83 stifled the forests from Indonesia and Borneo to northern Malaya, but spared the forests of Khao Yai. This time the drought stretched into Khao Yai; no river or stream flowed; the forest was dry and leaf fall covered the floor in inflammable layers. The animals were in hiding! I saw but 40 species of the nearly 300 kinds of birds known to be present. But this weather is transitory and the forest would recover with new rains. Khao Yai is suffering not from bad weather, but from bad management. I warned them years ago that a road transecting the park would destroy it. In 1983 they completed an extensive road of freeway width through the park that is killing it. (Ten years later the road was lined with secondary trees, trying to heal the wounds, but it still interrupted the normal flow of wildlife.) They wanted to increase the deer herd, so they continued to burn lallang fields to produce young grass for the ungulates; this not only burns the surrounding forest back each year, but further hardens the laterite soils to pavement texture. They enlarged the golf course, the reflected heat from which is injuring the forest. They planted exotic trees such as Eucalyptus for "beautification." They enlarged parking areas and did nothing to halt the flow and noise of traffic through the park. I wept for Khao Yai!

Pilai had planned a farewell party for the delegates, but my remaining Thai daughters had other plans for me. Chalernporn and Woraphat had a dinner party set up at their family estate. I was put in the new guest quarters to bathe, refresh, and repack. Chalernporn and her cook outdid themselves with several delicious Thai dishes, fruit, etc., and even a chocolate cake welcoming me back. It was a flash of the past to see all of the girls clustered in a bull session as they used to do at ASRCT while we men, including Yongyut who was the only male member of my staff, discussed the problems of environment in Thailand. Later Pon and Somchit took me to the modern Airport Hotel where I could sleep to 0330 and then cross

over to the terminal to sign in for a 0630 Northwest flight back to San Francisco. Pilai and Tsuji were there to see me off!

The usual mystifying geography: I left Bangkok at 0630 Saturday, April 11 and arrived at San Francisco many hours later at 1000 Saturday, April 11. I picked up a nice rental Pontiac from Avis and spent the next couple of hours driving to Asilomar, the verdant and famous (in these parts) convention center amid Monterey pines and by the sea. Arrived in time to register for the 1992 annual meeting of the Western Section of the National Audubon Society. About 500 people attended and, to my amazement, I found Bill Supri there, although he said that he was not attending. We were treated to three days of superb lectures and slide shows on the topic of bio-diversity. Such meetings are of intrinsic value, but much of their thrust is lost because information and inspiration are poured upon those already converted; with an average age of about 60. Would that developers and unbelievers could have heard and seen the meeting.

I drove south along coastal Highway 1, enjoying spring's massive floral display (a California heritage if it rains) of poppies, lupine, wild mustard, and a host of others, arriving at Jeannette's in time for lunch. It was an opportunity to see what she and David had accomplished in remodeling their beautiful home above Moro Bay to make it even more beautiful. We returned the Pontiac to Avis in San Luis Obispo and Jeannette drove me home to Camarillo.

The rush did not stop! As always, a pile of mail to sort through to find first class letters among the junk, and to answer the urgent ones. I had returned soon enough to conclude my spring bird watching course, as always a demonstration of bird banding at the Camarillo Grove County Park. Cam spent Friday night with me as she had been doing in order to get me to these classes on time. On this occasion, we caught 45 birds of nine species, enough for each student to handle and release several. As this was the day before Easter, I returned with Cam to Simi, and then drove to Yorba Linda in Orange County to be with Bob's parents, Bob Sr. and Flo. The evening was spent coloring 16 dozen eggs that Cam had accumulated from her hens. Easter Sunday we attended a beautiful service of music and flowers, and the family gradually assembled during the day until there were 20 of us.

An Audubon Board meeting was on Monday evening at Bill Supri's home as usual, and the following morning I went to Oxnard to talk to four of Hal Wasserman's middle school classes. I enjoy giving these, for I make these citified kids put on their dream-hats, and I take them on an imaginary field trip through the woods, showing them many things that they might find and learn about. They love it and respond with vociferous interest. The Ventura County Science Fair was the following day and I was one of the judges. I find working as a judge with the various school science fairs very rewarding, both for me and for the youngsters. Over 500 6th-graders through high schoolers participated in the Science Fair and some of their projects are both ingenious and thought provoking.

Thumbing through the mail, a residual of the Thailand trip, I found notice of the 110th American Ornithologists Union's annual meeting that was to be held at Iowa State University, Ames, during the last week of June. Since I had planned to visit the Crawfords and see the farm again, this was an opportunity to do both.

Sending funds for fees and air reservations, I began planning the trip, not anticipating the ticket war that was to burst out between airlines. Even though I booked early, there was no refund for the difference in fares. By mid-June, air travel was a madhouse. Everybody and his relatives were going someplace. The airlines systematically overbooked, and terminals were Ellis Islands as customers tried to get boarding passes on the flights they had booked. At every stop there were blinking lights requesting people to change flights and offering margins and rewards for doing so. Long lines of sweating kaleidoscope-clad travelers argued with attendants for seats and flights. Travel costumes these days are somewhat bizarre with Zeigfield Legshow most evident. Since my bookings had been made so far in advance, I avoided this hassle.

Flying has retrograded to the Model-T type, repair as you go! Bill Supri got me to LAX in time for the 0800 United Flight which left reasonably on time, but at O'Hare in Chicago the ongoing flight to Des Moines picked up a pebble or bird on landing and bent the fans in one motor. This required a two-hour delay in departure. Although I arrived late at Des Moines, the summer evenings are long at this latitude and I had plenty of time to pick up a nice blue Pontiac Grand Am and drive north to Ames. By this time, I

had forgotten the name of the hotel at which I had reservations, but there were not many hotels in the vicinity and I soon found the correct one.

The return flight was a similar hassle. United departed from Indianapolis on time, but the farther west we flew, the higher the surface temperatures rose. Landing with a thump at Denver, the mile-high runways were so hot that the loaded planes could not take off. Every third passenger on the flight to LAX had to be bumped, with all kinds of anger and limitless promises from airline officials. Again my early booking got me through.

The AOU conference was very rewarding. Delegates were assigned rooms in large, vacated student dorms. Little box-sized rooms with community shower and toilets, but it was fun subjecting my doddering old bones to the environs of youth and hobbling up and down stairs. The elevator to my sixth floor domain was operable most of the time.

The value of such meetings revolves around finding old colleagues, making new acquaintances, and listening to papers that you wouldn't have time to read at home. The theme of the conference was two-fold: birds and farming, and the problems of neotropical birds. Biologists are gradually realizing the importance of the farm as an ecosystem and its effect upon bird evolution. Several speakers from Brazil presented the neotropical problems. The conference lasted for five days with three evenings of banquets or dinners, and over 300 in attendance.

Each morning I walked through the campus, for exercise, for memories, and for bird watching. Robins were in abundance, nest building or feeding young. They build a deep cup nest of mud, reinforced with string, fiber, or plant material. One was low enough in a shrub for me to see into it, and there, carefully woven into the side, was a condom. Nothing like making use of available materials!

Sunday, June 29, I checked out and took the side roads to Atlantic to visit Ethel Berry; the same Ethel Berry of Lewis and Mourning Dove days more than half a century ago. She was expecting me, and though frail (her 99th birthday is this month), she was happy to see me and full of things to tell me. She began to tire after a couple of hours, so I bid my goodbyes to her and to Virginia, her daughter, with whom she was staying, and went on to Lewis.

In 1983, Lewis appeared very drab and run-down, but the past ten years have spruced it up a bit more. More houses painted, trees in better shape, and even a couple of nesting Mourning Doves. The three houses that Lucy and I had called home in 1938, 1939, and 1940 were still in existence and occupied. While I was photographing them I met a woman who had known me when she was a child and had married one of my Boy Scouts. The Weppler family was still present and I visited with them before going on south to Clarinda. Marco was four when I banded doves in the family orchard, and he and his seven-year-old sister, Rose Marie, had followed me from nest to nest. Marco is farming near Lewis and has three children, but Rose Marie was more prolific with 12 children, then 21 grandchildren, and now 41 great grandchildren. Wow!

It took me a day, driving among the beautiful hay and corn fields of southern Iowa and across the corn and soybeans of Illinois, to travel the 450 miles to the farm. This initiated a very pleasant week of visiting. Always before such visits included Lucy, but this time I had the opportunity to really become acquainted with Mark and his farming capabilities. He is most impressive; operating 2,500 acres with several landlords in a most efficient and business-like manner, making use of modern farming knowledge and methods. We celebrated the Fourth at his home. He and Vicki put on a barbecue supper, and we exploded a few fireworks before going to Danville to top off the evening with hot-fudge sundaes!

The Fairchild family cemetery was of concern to me. We located an engraver to put Lucy's name on the family monument. The cemetery has been designated as a nature preserve to save the several native plants that grow there. We contacted a Mrs. Westfall, who was in charge of several such preserves, and it was agreed that Mark and his helpers would right or replace stones that had fallen and secure them with cement. I would help defray the costs of rehabilitation, and in the future Lucy's family monument will be there among the others that go back for nearly two hundred years, standing among beautiful native grasses. ("Weeds!" said local farmers in disgust, still not understanding the need for such preservation.)

Somewhere in the Seventies, I took over the teaching of a bird watching class from John Borneman, who was becoming so involved with Audubon matters that he could not spare the time to teach. The Community Services

of two local colleges, Ventura and Moorpark, wanted this activity, and eventually I combined the two, giving one class in the spring and one in the fall. During the first few years, attendance was poor, but with media propaganda about nature and the Reagan and Bush administrations confusing development and environmental protection, the ability to learn about and relate to wild birds became more popular—with the result that my classes often become too large for effective field trips and I have enlisted the help of those who have taken it and become ardent birders. The class includes one orientation lecture and five field trips on consecutive Saturdays. The final lesson is at Camarillo Grove near town where I banded for several years, and there I set up nets and demonstrate bird banding. This last trip has always been popular—participants bring coffee and donuts and, if late enough in April, celebrate my birthday.

As the years have rolled by, this class has been a source of numerous friends and acquaintances. Vicki Buffalo helped me with the banding, and then Jean Brown took over the early morning work at the park. Hal and Jan Wasserman were among the early students. When we got to the bird-banding lesson, Jan was so enamored by the job that she turned to Hal and asked, “Can I quit my job and do this?” He acquiesced and she did, spending many weeks with me, learning both netting and trapping techniques. Now she is a Master Bander, and for six years has been studying Western Bluebirds, Violet-green Swallows, House Wrens, and others at the John Taft Ranch near Ojai. Her banding records have added much to the knowledge about these birds in Southern California. Other early students included Bill and Hazel Supri. They became ardent birders, and for three years he has been president of the Conejo Audubon Club. And Nathan Tobol and Rimah Watt; he is a computer expert and she is a remarkable woman of many talents: a flyer, artist, motorcyclist, reptilologist, clock worker. The enrollment now numbers upward of 30 for each class, and from them have sprung numerous friends and active birders, a real joy to me since most of them are women who have made my years pleasant.

ANSWERING the insistent phone, a familiar voice said, “This is Jim Reuther. Dad tells me that you are going to Thailand again this year, and I want to go along!” Jim is Fred Reuther’s youngest son, and this provided

me with an escort to help drag heavy bags and keep track of me. Of course, it became the reverse, with me keeping track of him, that is!

This epic began July 6, 1993 with Rimah taking me to the local airport bus terminal to LAX and a USAir noon flight to San Francisco. It was a long trek from USAir to International Northwest, and I barely made it to find a boarding already in progress and a nervous Jim pacing. Ten hours later, we arrived at Narita, Japan; an hour or so wait, then on to Bangkok at 2300, July 7. Jim and I had seats near the galley where we could watch the food and hostesses and spend hours getting acquainted since he had left Port Euneme and was soon to receive his Ph.D. in aeronautical design. One of the brilliant young generation that will send us further into space. Met by Pilai, Chalernporn, and Woraphat; Chalernporn drove me to her compound and Woraphat took Jim to a Peace Corps and transient hotel in the center of the city.

At the airport, arriving passengers crowded about the turntable, intently and anxiously watching the battered luggage. In front of me was a lovely young Asian and a handsome young man who said that he had schooled at Paducah. The girl looked up at me with laughing eyes and I immediately fell in love again. I had to grasp her by the shoulders and pull her back to avoid being struck by someone struggling with a heavy case. This resulted only in a smile and a quick thank you; so different from the offended scowl of an American woman, feeling that she was being sexually assaulted.

At breakfast Chalernporn explained some of the functions at this elegant compound where there was so much daily activity. Household help now costs 3,000 baht a month. At an exchange rate of approximately a nickel per baht, that comes to 30 dollars which is still less than we paid Payom years ago. A driver receives 3,600 baht, and yard help receives 1,400. I noticed that most of the yard help were youngsters and Chalernporn said, "Yes," they brought youths from the farms or villages up country and housed and clothed them while they went to school and learned trades. This included teaching them sanitation and work ethics as well! Also with us at breakfast was Hana Eleville, an exchange student, a lovely teenager from California who was striving to master Thai and go to school nearby; her father a chancellor at an eastern college and mother teaching at UCLA.

Chalermporn had planned a luncheon for Jim and me, and had invited my Thai daughters and friends. Jim, being adventurous, took a bus instead of hiring a taxi. Striking up conversation with girls on the bus (who knew some English), they directed him to our address, but traffic was impossibly slow and he forgot the time, arriving more than an hour late. But time is not a matter of concern to the Thai, so we were deeply involved in chit chat: Niphan, Pranee, Pilai, Monthip, Pornthip, Sunee, Somchit, Pon, Toni, Lakhana, Nivesth, Preecha, Yongyut, Nagamwit—aren't these fascinating names! Somchit and Pon took Jim and me for a spending spree at the Narayana Phand.

Woraphat furnished us with a car and driver and, after picking up Jim from his hotel (he was always hard to find since he kept exploring his fascinating surroundings), we struggled through traffic to Old Town. One does not drive in Bangkok, one sits in the fumes and waits! At Boonsong's place we were immediately greeted by one of the doctors and, as I chatted with Mrs. Lekagul via one of her many daughter-in-laws, the brothers one by one came to greet us; the clinic very active. It was insisted that we join them for a lunch on the 15th.

Dr. Boonsong had an extensive collection of Southeast Asian birds in his museum adjoining the house, and the Western Foundation of Vertebrate Zoology at Camarillo was interested in obtaining it. In the non-airconditioned museum the specimens were dirty and much in need of curator care. Discussing with the family, they insisted that it must remain in Thailand and at a proposed national museum. I feared that the collection would deteriorate beyond use by then.

On to the Thanom Stamp shop for stamps and more gifts, where Jim was enthralled by the silver bracelets and hill tribe work, and I bought more opium weights. Around the corner was the Oriental Hotel, site of many happy hours for Lucy and me, but since a fire a number of years ago it had been rebuilt into a snooty place. An ornate doorman politely refused us entry with Jim's long hair and shorts. We ate at a small restaurant nearby, what appeared a "den of thieves," but the food was good.

Back at Chalermporn's, Pilai came for us at 1700 and we began the long drive to the Khao Yai; along the way picking up one of her assistants. A violent storm intercepted us with raging lightning, thunder, and driving

rain. Jim took over the driving and successfully got us into the center of the park via the new southern road (which I reviled earlier) to our quarters by midnight. Two of Pilai's trainees from Indonesia were there as well, and Jim soon developed a friendship with them, long lasting I hope. Woraphat and Hana arrived while we were breakfasting, and we went to the same hide near a Wreathed Hornbill nest used last year for observation, and again sat for hours waiting for young to be fed. It requires absolute quiet, for the parent birds are very cautious and would not approach the nest if anything appears suspicious. Later in the afternoon we watched a flock of Wreathed Hornbills approaching an evening roost.

It was Sunday and we visited a waterfall, Nakorn Nayok, one of several that drain the uplift that is Khao Yai. Quite high and spectacular, it was the scene of an incident several years ago that caught the eyes of the media world wide. A young elephant became trapped by swift water at the brink of the falls and an adult male tried unsuccessfully to retrieve it, both plunging over the falls. The calf was killed and the bull, with a broken leg, struggled for days to pull itself out of the water up a steep embankment. Thai rescuers made an urgent but ineffective effort to save the animal, which finally died of its agony.

To the north and west of Bangkok lies another beautiful and mountainous rainforest national park, Kheng Krachan. We drove for hours through gradually wilder countryside until we came around a hill, and burst before us was an extensive, blue, shimmering lake, man-made by damming a mountain river. Beside it was a tourist headquarters for registry and entry into the Park, and the foot of a 40-km, narrow road that wound through the mountains to a summit overlooking miles and miles of virgin forest bordering and into Burma. We met Laura Arawe, a 35-year-old Peace Corpsman assigned to and dedicated to the Park as a ranger, hopefully to imbue the officials there with a conservation and environmentalist understanding of their important responsibility to husbandry this precious resource for Thailand and future generations. We talked in this vein constantly, trying to give her ideas and inspiration that might aid her in this effort. Not to be pessimistic, but Pilai's wonderful work, Katey Buri's ardent vocal and financial support, and my advice have done little to alter the mismanagement of Khao Yai. Hopefully, public and official opinion has matured over the past 20 years,

and this spectacular example of Southeast Asian rainforest can be permitted to survive.

From road's end it was a 4-km hike down to a waterfall which Laura and Jim, in their youthful vigor, attempted. Four hours later they clambered back up the pathway having seen the falls and enjoyed the forest, and wringing wet with sweat.

Lower in the forest was a campground with partially completed visitor's cottages, concrete floored with inoperable toilets and no cots. I was provided with only a blanket and mosquito net, unfortunately inadequate for my 83-year-old arthritic joints. I slept fitfully in the van, but the night was superb. Owls and nightjars calling, and following a light rain, a host of tiny frogs hardly larger than a bumblebee were harmonizing with ballooned throats almost greater than their bodies. Clad in my underpants, with a flashlight in my teeth, a camera in hand, I crawled through mud and gravel to attempt closeup photography—and obtained my most spectacular shots of the trip.

But our tourism wasn't finished. Jim and I had a tasty lunch with Boonsong's family, and Chalernporn's father treated us to a gourmet Chinese meal in the Dusitani Hotel. Lucy and I had watched this spired hotel spring from an open field, and I had photographed the thousands of House Swallows that used to roost nightly each winter on power lines before and beside it. Now, many years later and following renovation and redecorating with exquisite beauty, Chalernporn's father, who is on the board, introduced us to new Chinese dishes served by gorgeous Thai girls with body and leg revealing costumes.

This was not the last of our culinary experiences. On another evening we were taken to an immense open-air restaurant, claimed to be the world's largest, for a good meal with a background of searchlights flickering from 24-hour construction of skyscrapers, and with Thai dancers performing on several stages.

Somehow we found time for me to lecture at the Siam Society pavilion only a few blocks from our home at 4 soi 15 Sukumvit, meet with the Society publication editors who decided to publish my manuscript on the rainforests of Southeast Asia (both in Thai and English); and for Jim and me to lecture to the TISTR assembly on America, he doing a much better job than I. Following this we dined at a new hotel across Phahonyothin

boulevard from the lab, a buffet lunch to the accompaniment of live music.

But you cannot fail to sightsee in Bangkok. Jim and I explored the Marble Temple, Wat Po and all of its stupas, and spent a morning climbing up the great stupa of the Temple of Dawn overlooking the Chao Phya River and the Royal Palace with Bangkok surrounding it. And we even drove to Ayuthya, the old capital to see some of the ruins there, had a good meal on a river boat, and visited a wildlife exhibit park that Woraphat was actively sponsoring.

Woraphat gave a small luncheon for me at which I met several of Bangkok's leading conservationists and teachers, among them Pilai's "angel," Mr. Boonsai. Boonsai, chairman of telecommunications and wealthy, has become interested in the fate of hornbills (and possibly Pilai), so suddenly she has a sponsor for her research. He had just given her two expensive binoculars and an 800mm lens for her camera, and after I explained the risks she was taking by climbing a makeshift bamboo tower for treetop observations, he quickly offered to build a permanent tower for her.

Wishing to revise my "Migration and Survival of the Birds of Asia," I spent time at TISTR going over some of the old MAPS records and, with the help of Lakhana, Sunee, and Pornthip, reviewed the babblers. After we left, they continued the work and sent me much data.

Two weeks hurried past, and Jim and I were off to Japan. Met at Narita by Yoshii, we continued our whirlwind tour. Yoshii put us up at an inn where Jim would experience tatami and futon comfort and Japanese hospitality. I developed a little diarrhea, which I quickly controlled with Kaopectate, but Jim had picked up some virus and developed a fever that finally confined him to his room in the Ougaisu Hotel in Ueno.

Yoshii introduced us to the new Yamashina Institute in Abiko City. Before Dr. Yamashina died, he managed to find funds for a beautiful new building in Abiko City to replace the bombed, shattered, restored museum at his destroyed palace grounds in Shibuya, a museum that housed the finest ornithological collection in Japan. These collections were moved to properly air-conditioned quarters in the new building; Yoshii's National Bird Banding offices occupied the second floor.

What an exhilarating change, from the frenetic undisciplined furor of Bangkok to the open and orderly Japanese scene. Less traffic moving;

orderly, clean, efficient trains that went everywhere; beautiful subway trains with no New York graffiti (graffiti emphatically prohibited); and courteous, well-dressed people. We caught trains up country to Lake Imbanuma where one of Yoshii's banders, Shigata, took us to a banding station by the lake. With 20 twelve-meter mist nets extended through the tule beds of the shore, they were capturing Reed Warblers. Their banding techniques reflected MAPS training with their own innovations.

The Innkeeper spoke enough English that he and I could take our accumulated bulky luggage to a shipping agency for delivery to Narita where it was stored until Jim and I could claim it at flight time on the 26th.

Yoshii arrived and we checked out of the Inn and, with what luggage remained, went on the Shin Hama Imperial Household Refuge, site of so many events in the past. Here, several of the old employees and bird catchers were still functioning, Hanami-san now director. All of the old boys spent a happy two hours walking the grounds, reminiscing and drinking tea. Hasuo, also from MAPS days, brought his van and took us to his nearby bird observatory and bird rehabilitation center. The government had built him a three-storied semi-circular observatory facing a remnant marsh island from Shin Hama, a bit of Tokyo Bay marshes. Lining this mass of windows were benches mounted with telescopes to view the marsh birds and ducks that assembled on this bit of habitat so essential to their survival. School children and tourists could use these and learn. His rehabilitation work was somewhat primitive compared with our experts working in Southern California (Trish, Candace, Jerry, and others).

Boarding another train, we arrived at Ueno in Tokyo to check in at our Ougaiso Hotel near the zoo. Jim collapsed in his room to spend the next three days recuperating. Yoshii and I went to the Tuttle Publishing Agency to meet a Mrs. Yoshio Kai concerning the distribution of "Inago, Children of Rice," which had just been published. This was a distribution agency, not the Tuttle Publishers that I had expected. She was laboring under the impression that I wanted the book translated into Japanese. Convincing her that I wanted the agency to distribute it, we could see that our cause was futile and left with kind but empty words.

As evening approached, I wandered the still familiar streets of Ueno, in spite of new construction and with many memories of our days in the

park when Dr. Harada the linguist was alive.

A typhoon, the fourth for the season, swept into Japan and didn't let up until we left. Yoshii and I boarded a train at Ueno station for Omiya. All of the country between that had been cultivated fields and small villages was now a big city; Omiya Station immense and unrecognizable. We took a bus to Sagiyama, a place no longer recognized or recognizable. Houses and shops built right up to where herons and egrets once strutted. The colony had collapsed and been deserted for more than 10 years. It was even difficult to find Wataru Maru's home; none of the trails were familiar. Once there, we were greeted warmly by Wataru, Yoshie, his younger sister, and Akiko, her daughter—see "Inago" for their stories.

Rain continued heavily; Japanese photographers from NHK had been alerted and were present. I was on the 1845 news talking in the rain about Sagiyama and its sad destruction after 300 years. We had a very happy visit, talking about old times; the Marus listening intently to Yoshii's translation of my comments and vice versa; eating osembi, rice balls, and sliced cucumber. Twenty-one-year-old Akiko was shy but loosened up as we talked, as pretty as her mother had been, but Yoshii still had a very pleasant face. NHK took many pictures in the house and then asked Yoshii, Wataru, and me to walk through his small fields in the rain. Most of the rice fields were gone, except for Wataru's few remaining patches. The area was to be a park and Wataru could grow rice two more years and then the fields would be converted into tennis courts. I was aghast and furious. "Japan needs rice, not tennis courts!" I raved. The loss of these fields reduces Wataru's holdings by nearly half and he had turned to diversified farming of high-value products to survive. We enjoyed chatting until 1500 and then Wataru took us by car back to Omiya Station; a far cry from the days when he had neither new house nor vehicle.

Back at the hotel, Jim was better, but refused to go with Yoshii and me to the Yo Yoi Kai Kan, a very expensive hotel, wedding place, or convention center. We were joined by Dr. Nagahisa Kuroda, a friend and coworker from the past, Teruko, Yoshii's lovely wife, and Dr. Udegawa, a friend of Jack Moyer from post-war days and Kabaya ornithologist and recorder, adept at recording bird sounds and presentation who used to appear at MAPS conferences via the grace of MATS and Col. Cook. Good to see

them all looking so well. We had a proper silver setting of eleven items: three forks to the left, a butter knife, a knife and fork for fish, a small spoon for ice cream, and a demitasse spoon for coffee—no chopsticks? An equally delicately served supper of salads, lamb, a decorative fish dish, ice cream, and water melon (to the tune of more than 7,000 yen for each host).

Another feast awaited Jim and me, at the hands of the Urashimotaro Society. John Masuoka greeted us at 1100, and we bought tickets to Narita for the morrow and entrained to the Asakusa business district. Still pouring rain, but the Asakusa lane was canopied and crowded with shoppers. My only accident of the trip: I slipped on a step approaching the temple, bumped into an elderly lady who would have fallen had I not caught her. But her dress dragged on the muddy tile and she fled, angrily incensed at the gaijing (foreigner) who had upset her!

Shopping on the Ginza was as expensive as advertised. Furosuki's, beautiful cotton or silk scarves that used to sell for a dollar or two, now cost me nearly 40 dollars a piece, one each for Cam and Jeannette.

When we lived at Washington Heights family housing, only two stations from Shinjuku, this suburb was of buildings no more than seven stories. Now we disembarked and stepped from the station to the Sumitomi building with a vast lobby, and mounted to the 50th floor for a supper of fish, shrimp, lobster, and numerous side dishes, too abundant to consume all. The "old gang" was there: Peter Endo, John's long-time pal, looking as fit and prosperous as an automobile salesman, Henmi, Motojima, Okada, Mizaki, and Boyo, the only girl from the original group, all healthy and prosperous. Jack Moyer (now Dr. Moyer), with his beautiful young wife, Lorna, joined us happily. In his own words, "I was married five years ago to a wonderful Philippine woman, whom I met when she was a dried fish peddler in the sub-human Pasil fish market in the slums of Cebu. I had heard about her from the fishermen's wives in a small, extremely poverty-torn fishing village on Mactan Island where I was conducting a development program—new water facilities, electricity, toilets, weekly medical services—and where I was being cheated by the government official assigned to 'help' me. Lorna worked with me reluctantly at first, because she didn't like Yankees, but little by little we got close and now, after five years of marriage, we seem to still be growing closer and closer, and more and more in love. She is

perfect!" She is 28 and he is 72, about which she happily commented, "I love my grandfather!" He is putting her through law school, and she has given his life direction from a rather aimless past. He is now busy in national and international affairs related to conservation of fish and their environments. His autobiography, written in Japanese, was off the press and he gave me a copy. It was a gala evening of laughter and reminiscing.

Again, as last year, I picked up a rental car in San Francisco, a Chevrolet compact this time, and drove to Pacific Grove to visit with Dr. Ralph and Mildred Buchsbaum of the Boxwood Press. I had mailed him final copies of my autobiography (which you hold here). We discussed it and worked with it for two days, and he promised to have it published for Christmas or soon after. I gave him a check for \$10,000 and we parted amicably.

This time Jeannette was busy with Alexander's fifth birthday, and could not take me on to Camarillo where I arrived the next noon. Collected mail and BK, unpacked, returned the car to Avis, and had a "glad-you-are-home" supper with Rimah.

And then there was January 19, 1994. At 0430, the house shook and groaned and vibrated, and I rode it out in bed, the worst earthquake I had ever experienced, even in Japan. Picking up a flashlight, as all power failed, I rushed out and checked the gas lines for any leaks. Inside, only a few things had fallen, but later I noticed that all of the bookcases which had been bolted to the walls had pulled loose. I replaced the bolts.

But poor Cam—her place on the east side of Simi, was quite near the epicenter of a 7.0 shake up. Bob threw his body across her to protect her from falling objects, and they rode out the violence in bed. He had built the house well and it did not collapse, but about everything inside of it did. Because of fallen books and furniture, they had to remove things before they could open the bedroom door, and Heather was having the same problems. Downstairs, all of the bookcases and cabinets were down, broken glass and dishes everywhere. In her kitchen, the cabinet doors had flown open, emptying all of the dishes, 70% of which were crushed. They simply swept everything in the kitchen out into trash bins. Later Cam came over here to replace some of her losses from Lucy's supply. Bob's tools and tool shop were also in disarray, and the storage garage was simply a pile of boxes and debris. Such a mixmass takes several days to unscramble, and

weeks later they were finding things that had been misplaced. The chickens and dogs were frightened, but none injured. In my place, BK was in his cage and fluttered so that he broke wing feathers, but no other damage to him. Power and telephones were out for several days and I could not reach Cam, but when the roads were opened again I drove over to see how they fared. We all felt sorry about the damage, but were glad for no injuries.

List of Publications

1981: Some responses of resident animals to the effects of fire in a coastal chaparral environment in Southern California, *Cal-Neva Wildlife*.

1984: The wilted forest. *Hemisphere* 28; The wilted forest, *Hemisphere Annual V*; Survival among the birds of eastern and southeast Asia, *Journal of the Yamashina Institute of Ornithology*, 16; The occurrence of hippoboscids on some species of birds in Southern California, *Journal of Field Ornithology*, 55; Some visual effects from the drought of 1983 on the birds of Southeast Asia, *Malayan Nature Journal*; *Bird Banding: An Introduction*, 350 pp., The Boxwood Press, Pacific Grove, CA; In appreciation of the Yamashina Institute of Ornithology 50-year commemorative of the Yamashina Institute.

1987: The occurrence of chiggers, *Neoshoengastia americana*, among chaparral birds of Southern California, *The North American Bird Bander*, 12c.

1989: Thailand's Sanctuary of Struggle, *Birds International*; Epizootic lesions of House Finches in Ventura County, California, *Junior Field Ornithology*, 60; Tree bark habitat, *Bird Watcher's Digest*, 11; What characterizes an urban bird? *Journal of the Yamashina Institute of Ornithology*, 21; Occurrence of feather mites (*Proctophyllodidae*) among birds of Ventura County lowlands, California, *Junior Field Ornithology*, 60.

1990: Songsters dressed in grey, *Birds International*, 2; From Asian village to the gardens of Hollywood, *Birds International*, 2; Aeroplankton, bugs in flight, *Bird Watcher's Digest*, 13.

1991: *Whistling Wings: The Dove Chronicles*, Boxwood Press, Pacific Grove, CA.

1993: *Inago: Children of Rice*, 233pp., Libra Publishers, Inc., San Diego, CA.

List of species of animals collected at Batu Cave, many more of which have not been identified. Drawings by Chua Lai Hock.

VERTEBRATES

BIRDS

Apodidae

Collocalia sp

Hirundinidae

Hirundo daurica

Turdidae

Myophonus flavirostris

MAMMALS

Rhinolophidae

Rhinolophus affinis

R. luctus

Hipposideros bicolor

H. armiger

H. diadema

H. galeritus

Vespertilionidae

Myotis sp.

Emballonuridae

Taplozous melanopogon

Pteropidae

Eonycteris spelaea

Soricidae

Crocidura malayana

Muridae

Rattus jalorensis





REPTILES

Colubridae

- Elaphe tenebrosa
- Dryophaps rufescens
- Ahaetulla formosa

Gekkonidae

Gecko marmorata

Scincidae

Lygosoma scotophilum

AMPHIBIA

Bufoidae

Bufo asper —

B. melanostictus

Ranidae

Callula pulchra

— Rana calconota



INVERTEBRATES

Turbellaria

— Dugesia sp

Annelida

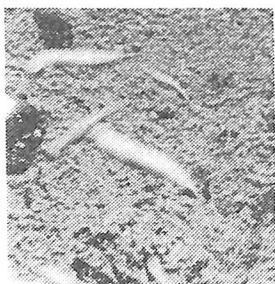
Megascolecidae

Pheretima indica —

Otchochaetidae

Dichogaster sp

D. bolavi



Snails

Melaniidae

Paludomus buccula

Stenogyridae

Opeas doveri

O. dimorpha

Achatinidae

Achatina fulica

Crustacea

Bathynellidae

Parabathynella malaya

Ostracods

Isopods

Armadillidae

Armadillo intermixtus

Oniscidae

Philoscia dobakholi

Myriapods

Diplopoda

Cambaridae

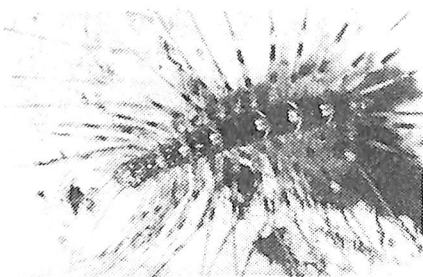
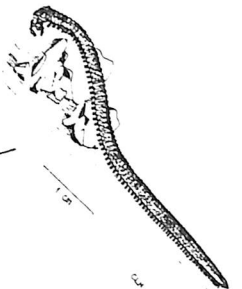
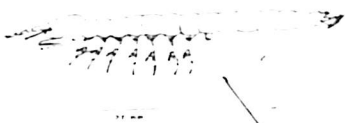
Glyphiulus sp.

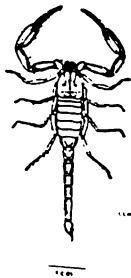
Doratosmus sp.

Chilopoda

Scutigeridae

Scutigera decipiens





Arachnids
Scorpionida
Chactidae

Chaerilus
Celebensis
Tarantulidae
Sarax
brachydactylus



Ideoronidae
Cryptocheiridium
lucisugum

Dhanus sumatranus

D. doveri

Spiders

Liphistiidae

Liphistius batvensis

Psechridae

Psechrus curripolpus

Ctenizidae

Damarchus

Cavernicolus

Ochyroceratidae

Psilodermes

Crinitus

Scytodidae

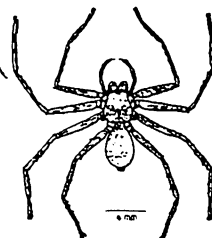
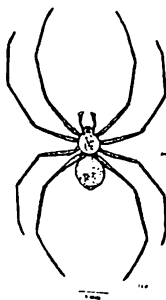
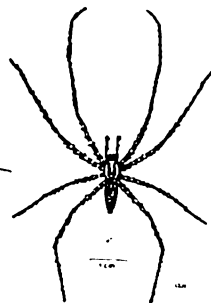
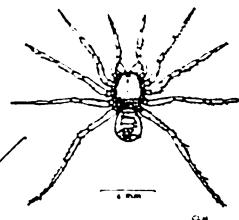
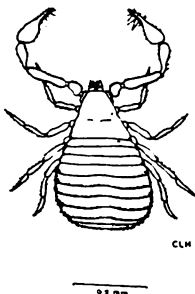
Scytodes magnus

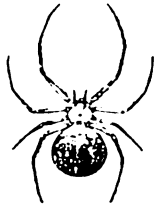
Pholcidae

Spermophora miser

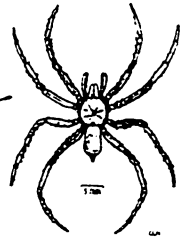
Uloboridae

Uloborus spelaeus

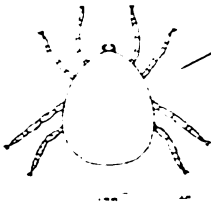




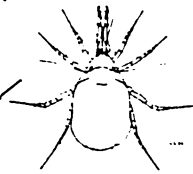
Therididae
Theridion rufipes
 Heteropodidae
Heteropoda
robusta



Acarina
 Argasidae
Ornithodoros
batuensis



Cunaxidae
Cunaxa
setirostris



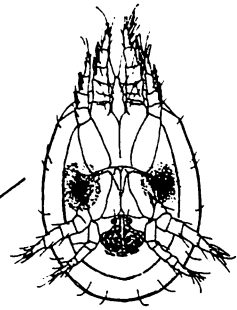
Trombiculidae
Trombicula batui
T. insolli

Cheyletidae
Paracheyletia sp.

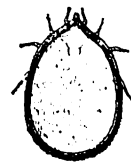
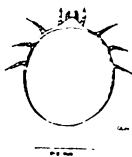


Galumnidae
Galumna sp.
Vaghiu sp.

Oribatulidae
Sche Lori bates
exuvium



Belbidae
Belba sp.



INSECTS



Collembola

Brachystomellidae

Brachystomella

contorta

Neogastruridae

willamiae nadchatrami

Orthoptera

Gryllacrididae

Diestrammena

graveyi

Gryllotalpidae

Gryllotalpa fulvipes

G. nigripennis

Gryllidae

Myrmecophilus

dubius

Blattidae

Pyconoscelus

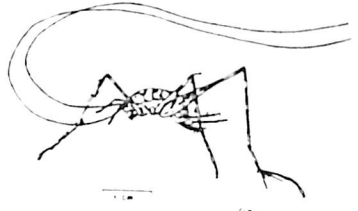
striatus

Dermaptera

Porticulidae

Chelisoches morio

C. brevipennis





Psocoptera
Liposcelidae
Liposcelis sp
Lepidopsocidae



Parason haploneura
Psyllipsoidae



Psyllipsocus
batuensis

Peripsocidae

Ectopsocus
maindroni



Ephemeroptera

Ephemeridae

Cleon sp



Hemiptera

Reduviidae

Bagauda lucifugus

Bagauda sp

Reduvius gua

Myiophanes fluitaria



Miridae

Fulvinus

brevicornis

Cydnidae



Neuroptera

Myrmeleonidae

Neglurus
vitripennis

Lepidoptera

Tineidae

Tinea
palaeochrysis

Lyonetidae

Opogona
Cerodelta

Coleoptera

Carabidae

Anaulacus
fasciatus

Staphylinidae

Pselaphidae

Scydmaenidae

Silphidae

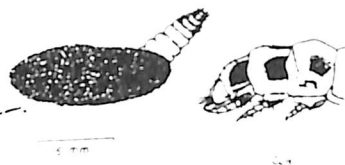
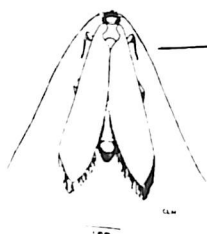
Languriidae

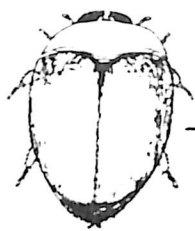
Thallisellodes
limboelint

Erotylidae

Platycladoxena
angulosa

Endomychidae





Dermestidae

Trinodes sp

Aethriostoma
undulata



Hydrophilidae

Cercyon gebieni

Dactylosternum
abdominale

Lampyridae

Lychnocrepis

antricola



Melyridae

Elaeteridae

Platynuchus sp.

Cardiophorus
carduelis

Melanoxanthus
dohrni



Tenebrionidae

Cueloeccetes

cavernicola



Aderidae

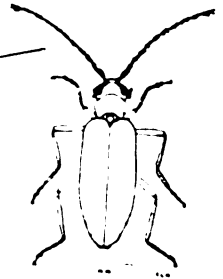
Aderus mclurei

Euglenes troglodytes

E. batuensis

E. cephalicus

E. malayanus



Orthoperidae

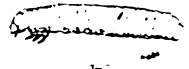
Silvanidae

Scolytidae

Scarabaeidae

Trox costatus

Curculionidae



Diptera

Tipulidae

Helius cavernicolus

Sciaridae

Platystrophia

brericalcarata

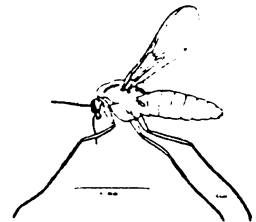
Soudesia sp

Phorodonta malayanus

Bradysia leucocerca

B. flagellicornis

B. platytergum



Psychodidae

Sycorax malayensis

Trichomyia betu

T. malaya

Phlebotomus
asperulus

P. stantoni

P. argentipes

P. anodontis

Telmatoxypus
mcclurei

T. kulas

T. albipunctatus

Brunetia sp.

Psychoda aponeos

P. maketi

P. lutea

P. malayica

P. pallucida

P. alternata

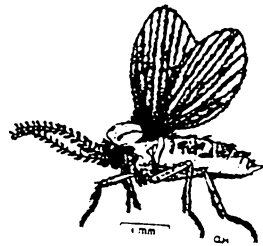
P. vagabunda

P. acanthostyla

P. savaiiensis

P. harrisi

P. malleola



Ceratopogonidae

Culicoides hufsi

C. peregrinus

C. arakawai

Stilobezzia sp.

Forcipomyia sp.

Atrichopogon

Jacubsoni

Culicidae

Culex

tritaeniorhynchus

Aedes albopictus

Uranotaenia sp

Chironomidae

Pentaneura

batuensis

Eusmittia

carverhar

paratendipes

inarmatus

Podonomus steineri

Cecidomyiidae

Mycetophilidae

Cheloneura carverhar

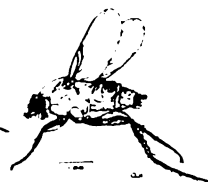
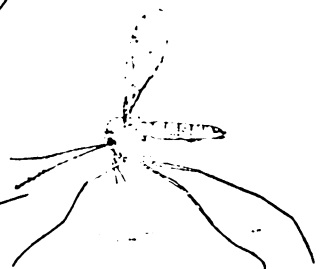
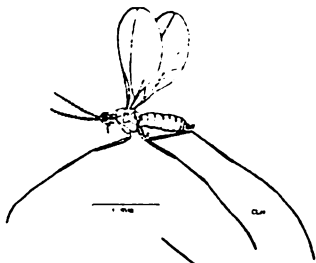
Stratiomyidae

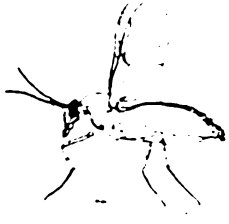
Sargus metallinus

Phoridae

Diploneura

peregrina





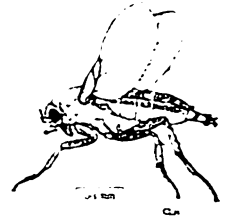
Drosophilidae

Drosophila melanogaster

D. ananassae

Dolichopodidae

Condylostylus sp.



Chloropidae

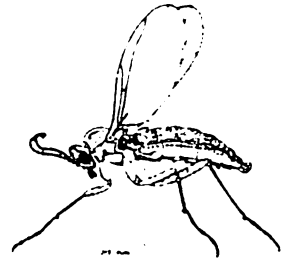
Tricimba batucola



Chyromidae

Gymnochyromyia sp.

Chyromyia dubia



Milichiidae

Phyllomyza cavernae

Leptomeltopa mclurei

Milichia sp.

Desmometopa sp.



Sphaeroceridae

Leptocera

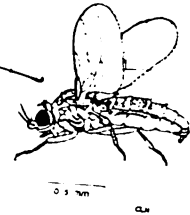
brevicostata

Sarcophagidae

Muscidae

Fannia leucosticta

Ophyra chalcogaster

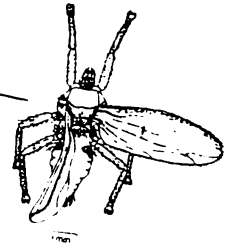


Nycteribiidae

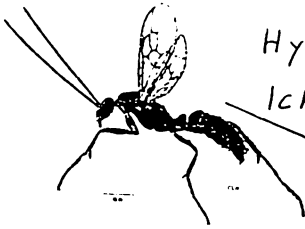
Eucampsipoda sundaicum

Streblidae

Nycteribosca gigantea



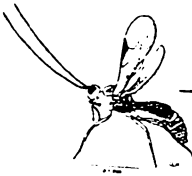
Siphonaptera
 Ischnopsyllidae
Thaumapsylla
breviceps



Hymenoptera
 Ichneumonidae
Hypsicerca
Gullawayi
H. cavicola



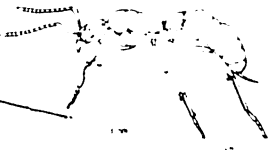
Braconidae
Aulosaphes sp.
Apanteles sp.
A. carpatus



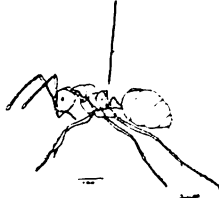
Chalcididae
Epitranus
stantoni
E. lacteipennis



Mutillidae
Trogaspidio sp



Formicidae
Pheidole javana



Bathroponera rufipes
Leptogenys diminuta
Paratrechina longicornis
Pristomyrmex sp.
Monomorium pharaonis
Tapinoma melanocephalum
Bathroponera tridentata
Ponera sp.
Camponotus sp.

